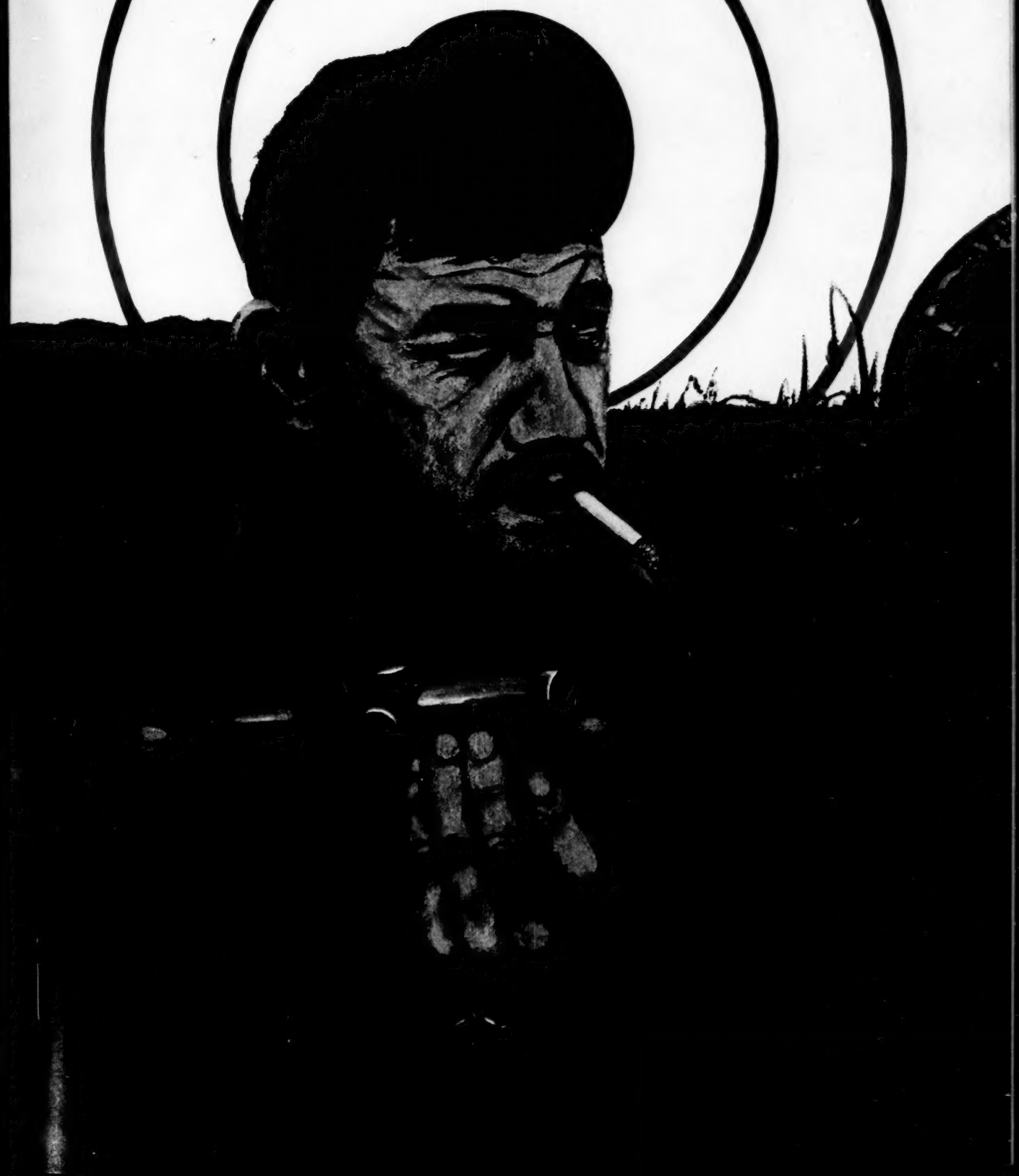
Marine Corps Gazette

AUG 1956

FORTY CENTS



Marine Corps Gazette

AUGUST 19
NUMBER
VOLUME

IN THIS ISSUE

FINAL OBJECTIVE	*Maj G. P. Averill*	10	
FITNESS REPORTS	*Col R. E. Cushman, Jr.*	18	
BERDAN'S SHARPSHOOTERS	*1stLt C. H. Strandberg*	24	
LOW AND SLOW	*1stLt J. M. Perry*	26	
RECONNAISSANCE—KEY TO THE CONCEPT	*BrigGen L. C. Hudson*	28	
REALISTIC REQUALIFICATION COURSE	*1stLt M. E. White*	32	
HAVE TACTICS BEEN INVADED BY THE ATOM?	*LtCol J. M. Strawson*	34	
STOP THOSE GUNS AT NIGHT	*Capt M. B. Reilly*	40	
PROFICIENCY FROM TRAINING	*Capt R. C. Schulze*	42	
OPERATION CITADEL	*Fieldmarshal von Manstein*	44	
THE HELICOPTER FAMILY	*Maj A. J. Clapp*	48	
MESSAGE CENTER	4	OBSERVATION POST	54
IN BRIEF	22	PASSING IN REVIEW	60

THIS MONTH AND NEXT With the National Matches at Camp Perry getting under way this month, this issue is dedicated to our shooters. The model for this month's cover is TSgt John E. Boinott, who as a sniper in Korea killed 9 of the enemy with 9 shots. This exemplifies the kind of markmanship the Corps strives for in its training. Staff artist TSgt D. W. Kiser used him as a model, because the practical application of training displayed by Boinott in combat demonstrates the confidence a man derives from the knowledge that he is proficient with the basic weapon of the Corps.

Next month readers will receive a bonus with their issue in the form of a supplement. This will be a study of one of the most unusual and significant battles of World War II. A battle which combined decisive co-ordination of ground and air forces to produce a decision. It also exhibits many of the elements which have influenced the new concept so far as the tactical engagement of forces is concerned. The report is of the Battle of Alam Halfa, a trilogy written by field commanders from each side and tied together with an analysis by B. H. Liddell Hart.

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TAKES A TENDER TOUCH...

Removing a time fuse from a live bomb is a job for experts only. Not only must these specialists be familiar with our own anti-tampering devices — but with those of the enemy as well, including any new ones he might ingeniously devise. These men *must* know what they're doing — for they can't afford to make even one mistake. Essential personnel, like these bomb disposal technicians, must often be moved to new assignments swiftly. That's why the military chooses to send them the *five times faster way* . . . via the speedy, dependable Scheduled Airlines. It's often the cheapest way too, when pay and per diem dollars are considered. When it's your move — remember the Scheduled Airlines — they'll put your men **ON THE JOB,** not "on the way."

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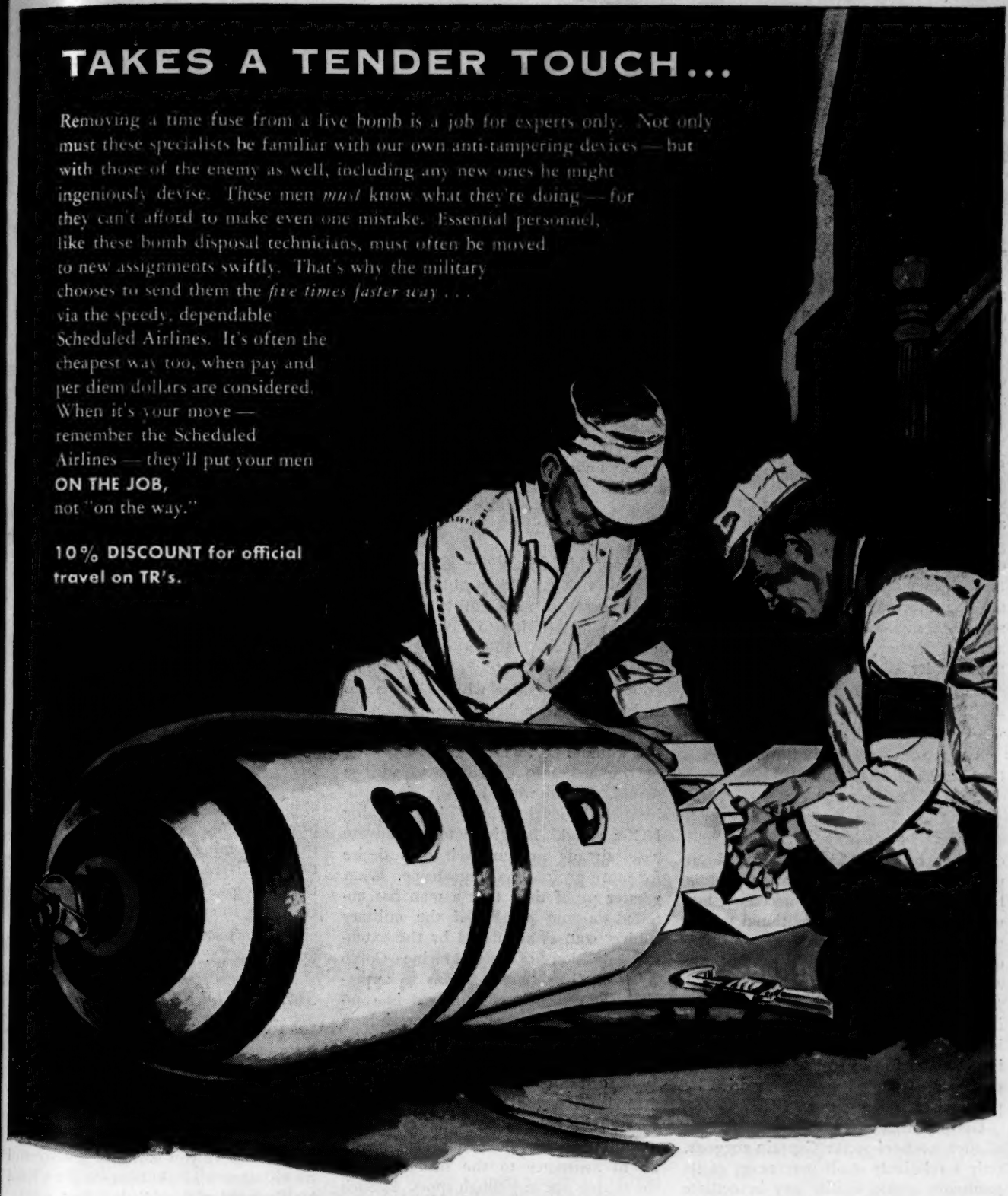

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message center

Professional NCO Schooling

. . . I have just read the article in the June issue by Capt E. J. Paradis entitled *Give Them Professional Knowledge* and I heartily applaud the idea.

However, selected students should ordinarily be ordered to such a school on a TAD basis en route to a new duty station. The best possible solution is to have all students chargeable to HQMC.

Capt Paradis has evidently given considerable thought to this suggestion and has worked out the details of organization in what seems to be the most economical and expeditious manner. Here is one Marine who would like to see the Marine Corps set up such a school of our own. The Army spends a lot of money and does things on a grand scale. We can do this on a grand scale, too, although with the facilities available at Quantico the extra expense would be negligible. Let's do it.

CAPT NORMAN W. HICKS
Camp Pendleton, Calif.

. . . *Give Them Professional Knowledge* was of great interest to myself and countless other NCOs who have been plagued with the feeling of *stalemate* brought on by the Corps' necessary, but unfortunate, lack of promotional vacancies for men in our category. I can think of no aspect of the problem that the author did not cover thoroughly, both *pro* and *con*, and with a rare insight into the problems confronting our senior NCOs. It was unnecessary to read the introduction to realize that the Captain spoke from a knowledge gained by personal experience as an NCO.

Granted that even with the existence of such a school as the Captain suggests, only a relatively small percentage of its graduates would realize any immediate chance of promotion. However, as he so ably pointed out, all would return to their parent organizations or new billets with a greater knowledge of all aspects of their profession and with the confidence and bearing that only a sure knowledge of that profession can give. I am sure that the Captain's suggestions meet with the hearty approval of a great majority of our career Marines of all ranks, but in listing the tentative requirements for students, nothing was said about an age limit. Of late it seems there is an increasing tendency to consider a man in the late 20s or above 30 years of age as too old for officer material, or other special training that many had not had an earlier opportunity for. Let us hope that such a policy would not be adopted if we are ever able to start such a program as the article describes. In conclusion, I should like to congratulate the author on a very fine article, and express my sincere hopes to see his suggestions acted upon soon.

TSGT W. B. TOWE
MABS-12, MAG-13

Three big cheers for Capt Paradis and his article. This problem has long been known to most enlisted men, and it is most gratifying to have it brought out in the open and a good sensible answer proposed. It is certainly to be hoped that the idea will be taken up and carried to a logical conclusion in a well planned formal school.

I would like to make one suggestion in the assigning of NCOs to such a school. If and when a school is organized, I believe priority in assigning NCOs should be given to those who have already proven their own desire for more professional knowledge. What greater proof than that a man has enrolled in and *completed* the military subject courses as offered by the extension division of the Marine Corps Schools. Capt Paradis seems to appreciate the difficulty encountered in completing these courses, and certainly a man completing one *has shown his interest*. The advantage to the Corps from such a method is twofold: 1) The first classes would be made up of men who could be depended on to take a great interest in the school and could be of assistance to the instructors in smoothing out any rough spots. 2) Such a group of students would provide an excellent pool for future instructors. No matter what method is used, it is a fine idea, sensible, and very feasible.

TSGT D. M. BRUCE
San Francisco, Calif.

. . . On *Give Them Professional Knowledge* (June 1956): One point presented by the author to broaden and enlighten the NCOs would be attendance at special lectures and advance problems conducted at Marine Corps Schools if the NCO School were established at MCS. During Fiscal Year 1956, a Landing Force Instruction Team (LFIT) was formed within the Marine Corps Educational Center, MCS, as a means of presenting an illustrative problem describing the planning and operational procedures, on a regimental and battalion level, involved in the execution of an amphibious assault. The problem is primarily designed for presentation to company grade officers and Staff NCOs. The problem goes into considerable detail on the application of the principles contained in LFBs and LFMs. The solutions presented are not necessarily *the* solution but *a* solution and one of the purposes of the presentation is to get all hands thinking on the problems generated by the helicopter-borne amphibious assault.

Let's get all hands thinking *new concept* by attending the LFIT illustrative problem. The Fiscal Year 1957 itinerary for the LFIT should be published by HQMC in the near future and when it is published, let's take advantage of this *ideal way to keep the greatest number advised of the latest thinking.*

On *Prepare for Instruction* (June 1956): A quote from Gen Lejeune's *The Reminiscences of a Marine* should serve as a guide or reminder when the training program and lesson plans are being prepared . . . "the importance of preventing the military instruction from becoming perfunctory in its nature was stressed, and the officers were urged to give thought to making it varied and interesting."

TSGT RICHARD J. SOUTHALL
Quantico, Va.

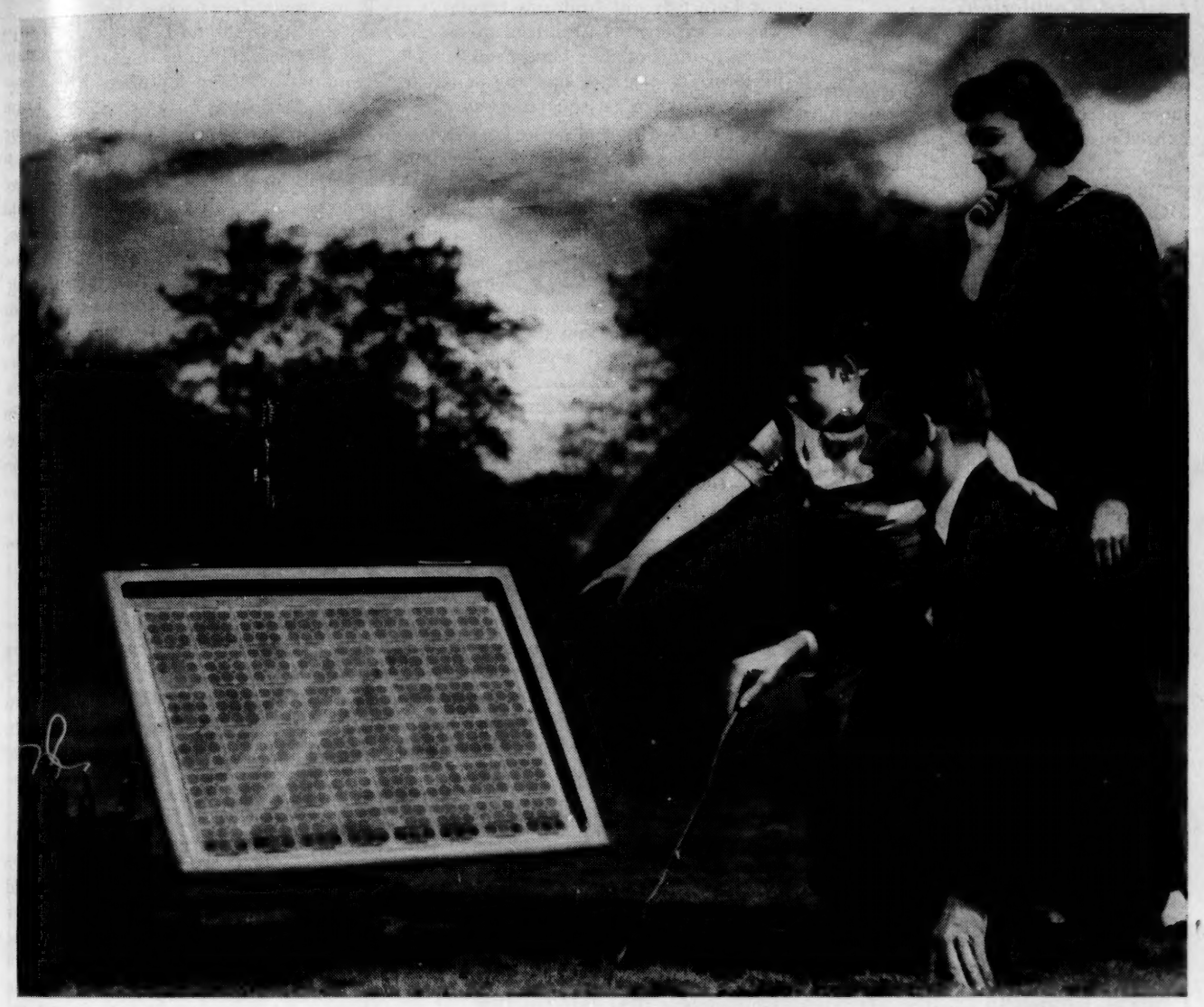
Shining Field Boots

. . . I am submitting the following information with the thought in mind that it will aid Marines.

Shining field boots has developed into quite a problem as the leather is unfinished. If the following method is used I believe you will find it successful on either new or old boots to get a hard brilliant shine with little effort.

Apply polish freely to a small area. Take a Coke bottle and dip the pouring end into some cold water. Then rub the pouring end of the Coke bottle on the boots. When it starts to get dry dip into the water again. In a matter of minutes you will get a hard, brilliant shine. Caution: do not rub too hard or fast.

TSGT J. J. BLANK, JR.
San Francisco, Calif.



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Uniform Regulations

. . . For the last few months here we have been in the midst of a uniform regulation campaign. This is much more specific than the one that has existed in the Marine Corps for the past 180 years. It has reached a point where people are really giving chapter 49 MCM a real going over.

When I got word the General was not pleased with the appearance of uniforms it did not worry me too much. Because with my almost 16 years experience I considered myself an expert on the subject. My battalion commander made up an examination on uniforms and required all officers and staff NCOs to take it. All the questions were taken from current directives pertaining to uniforms. After the exam was given I, and many others, found that our knowledge of uniforms regulations was not expert. As a result of the exam, many found out they have been out of uniform for years. I had to spend an extra 5 bucks to get squared away.

It was surprising to notice that so few resented being examined and corrected. When the program first started several were sore, but after having it explained to them, that for instance, if regulations require chevrons to be placed 4 inches from the shoulder seam why have them 5, no one could give a logical reason for not wearing the uniform according to the book. I personally think it's a lot of fun and am proud of the fact that I am *NOW* an expert.

Here at Lejeune we can no longer blame the PX tailor.

As I have already stated, I think the whole business is a lot of fun but, still it has some drawbacks. Much more of my time than should be is spent correcting uniforms. It took me at least one hour to walk from my office to the PX and back which is only two blocks away. Normally I could do it in 20 minutes. When I returned to my work I still had a feeling of guilt because I didn't have time to correct all I noticed out of uniform. If this program was carried out throughout the Corps (I mean enforcing it like we are, and not merely placing it on the bulletin board or reading it at three chow formations) the job would be easier on us all.

Our examination consists of things all officers and staff NCOs should know. We will be more than glad to forward a copy to anyone upon request.

MSgt V. J. Choate
2d 155 How Bn, Camp Lejeune, NC

The examination referred to in MSgt Choate's letter above consists of 77 questions. The first 17 are below, with the answers on page 63. The remaining questions will appear in subsequent issues.

1. Stars worn on ribbons are placed with one ray of the star pointing up.
a) True b) False

2. When troops lay out clothing for inspection, only the minimum required amounts must be displayed even though the men may actually have more than the minimum required clothing.
a) True b) False

3. In the blue or green coat, the left side of the back vent should overlap the right side at the bottom:
a) By not less than 1 inch nor more than 2 inches
b) By not less than 2 inches nor more than 3 inches
c) By not less than 3 inches nor more than 4 inches
d) By not less than 4 inches nor more than 5 inches

4. When correctly fitted, the blue or green coat should overlap in front so that the left closure overlaps the right side of the coat at the bottom:
a) By not less than 1 inch nor more than 2 inches
b) By not less than 2 inches nor more than 3 inches
c) By not less than 3 inches nor more than 4 inches
d) By not less than 4 inches nor more than 5 inches

5. When available, the newly adopted green scarf must be worn whenever you are wearing winter service with raincoat.
a) True b) False

6. Enlisted service stripes on the winter service jacket are worn with the lower edge of the bottom stripe:
a) ¼ inch above the strap on the sleeve
b) ½ inch above the strap on the sleeve
c) ¾ inch above the strap on the sleeve
d) None of the answers are correct.

7. Not more than 2 marksmanship badges may be worn at any one time.
a) True b) False

8. The new green scarf may be worn with the utility uniform by FMF units in the field.
a) True b) False

9. Unless otherwise specified, changes made in officers uniforms and equipment shall become effective when it is necessary to replace that particular item of uniform or equipment.
a) True b) False

10. Which of the following are properly called medals?
a) Bronze Star Medal c) National Defense Service Medal
b) Purple Heart d) United Nations Service Medal

11. On the utility cap, the officers small insignia of rank or the new metal chevrons are worn centered in the globe which is stencilled on the cap.
a) True b) False

12. A garrison cap made of regulation elastique material may be worn by officers wearing a winter service jacket and trousers made of regulation kersey material.
a) True b) False

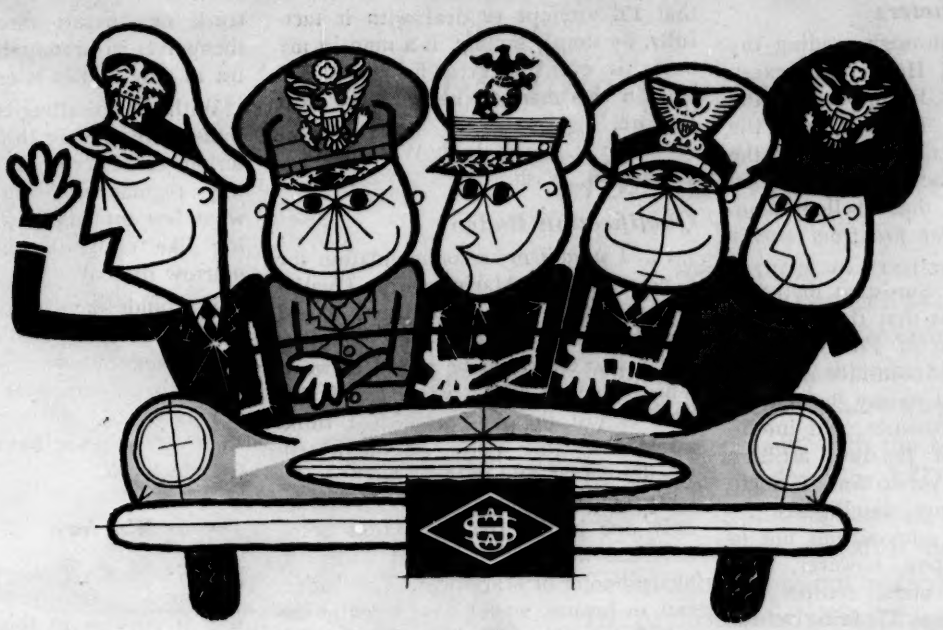
13. You have been awarded the Bronze Star Medal twice for heroic acts in combat. When you wear the ribbon for these awards, you would have on it:
a) Two Vs evenly spaced across the ribbon.
b) One V and one gold star evenly spaced with the star on your right.
c) One V in the center with one gold star to your right of the V.
d) One V in the center with one gold star to your left of the V.

14. Enlisted men will wear the service collar ornaments centered on each side of the shirt collar midway between the top edge of the collar and the point of the collar with the wings parallel to the top edge. How far from edge of the collar are these ornaments placed?
a) ½ inch c) 1 inch
b) ¾ inch d) 1¼ inch

15. The metal chevron will be worn on the utility shirt on each side of the collar placed vertically with the single point up and the center of the insignia on a line bisecting the angle of the peak of the collar, the lower outside edge of the insignia being equally spaced ½ inch from either side of the collar.
a) True b) False

16. The tapered end of the coat belt will pass through the buckle to the left and will extend beyond the buckle not more than:
a) 2¾ inches c) 3¾ inches
b) 3¼ inches d) 4¼ inches

17. An officer is stationed in Japan. Regulations permit him to have a winter service topcoat made there if he so desires:
a) True b) False



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Misplaced Millimeters

. . . I just got through reading the second part of Col Henderson's excellent article on NGF support in the Solomons. I did, however, get the proverbial *aha!* reaction from seeing the caption to one of the photographs used to illustrate his text, that labelled, *Landing at Laiana under fire from enemy 77s* (italics mine).

One of the most consistent myths of the Pacific War was that the Japanese possessed a weapon of 77mm caliber. I have made what I consider a pretty exhaustive search of enemy documents, lists of captured ordnance, and intelligence summaries of Japanese artillery materiel and have yet to find a single 77. Despite briefings, intelligence reports and outright admonitions not to report such a weapon, however, both Marine and Army combat records continued to tell of enemy 77s firing on our troops and even of their capture. Where or when the fable got started, I don't know, but the erroneous designation crept into picture captions (this is probably the case with the Laiana landing photograph [ED: *You're so right*]), correspondents' dispatches, and even on occasion into the intelligence reports of lower echelon units. It is probable that the Japanese improved M94 with muzzle brake or the M88 AA gun, both 75s, were usually the culprits.

Perhaps its continued "existence" can be attributed to the desire to have an enemy weapon similar to the ubiquitous 88 of the European campaigns. I wonder if some GAZETTE reader can provide an explanation of the birth and more especially the long life of this fabulous weapon. Or maybe someone has positively seen one, for a number of your readers certainly reported that they did back in 1943-45.

HENRY I. SHAW, JR.
Washington, DC

States' Rights?

. . . With all the excellent covers in the past that have appeared on the GAZETTE, I hesitated to write about the cover of June. I believe the picture is a good one, except for one small *eyesore,* the name of a state across the back of the helmet cover.

The new section called the *Observation Post* is a good idea. I enjoy reading it very much.

SSGT JOHN S. ECKERLE
Louisville, Ky.

. . . Surely the supporters of the picture appearing on the cover of the June issue of the GAZETTE must have removed the sign at Camp Matthews which states it isn't the number of rounds fired that wins battles, but the number of hits.

I feel so strongly about this matter that I'll attempt to deal with it tactfully, by simply saying: if a man in my outfit is ever observed firing an M1 rifle in this manner, his posterior will be sore!

CAPT JACK WESTERMAN
Bremerton, Wash.

Qualification Badge

. . . I submit my recommendation for a new standard Marine Corps Qualification badge. We, the enlisted, I feel would like to have a new shooting badge that we could be proud to wear. This badge which I have designed (below) is just the badge which I think all Marines who qualify should be entitled to wear and I know they would be proud to own. There should be only one badge, the distinction being only the wording — Expert Rifleman, Sharpshooter or Marksman. This badge, cast in bronze, would have a white target face with a black bullseye. This badge would be a far better incentive to Joe Blow, who would then take more seriously annual requalification firing.

SGT E. R. TIPROVICH
Norfolk, Va.

Change of Station

. . . Maj Graham's *Change of Station* brings to mind a by-product problem—housing. I offer the following suggestions for those anticipating transfer.

At every major post and station, I suggest that there be maintained at the housing sections a folder on the other major posts and stations housing. For example, the Quantico folder could contain information on Post Quarters, Midway, et. al. Information would include: 1) Pictures (exterior and interior. 2) Number of rooms and storage facilities. 3) Price (basic and additional monthly expenses). 4) Location as related to the base. 5) Schools children would attend and transportation facilities for them. 6) A copy of the lease. 7) Agency to contact for rental.

CAPT W. MCMANUS
Quantico, Va.

Here-now-kaput-tomorrow

. . . Our monthly clothing allowance is often a teacup into which we try to pour a gallon of uniform troubles.

In many cases the sum hardly approaches the outlay necessary for tank, truck or aircraft mechanics to keep themselves in presentable utilities. The list of tiny battles is endless.

With the spiralling cost of living, our wallets are anemic things, yet the mysterious character of Marine Corps clothing regulations continually menace what few coppers we tuck away. Shifting like sand, the here-now-*kaput*-tomorrow directives are bewildering.

It would be very nice if some firm, *permanent* policy could be established concerning our *quick-change* uniforms for both on-duty wear and for use off the station.

MSGT FRANCIS J. O'NEIL
Havelock, NC

Desert Warfare

. . . From an examination of the Marine Corps' current training schedules it appears to this reader that the Corps is digging a rut quite parallel to the one in which we found ourselves after WWII. Following that conflict our training was smothered with courses designed to teach jungle warfare and landings on coral-encrusted beaches. With the advent of the Korean affair we were forced to make an on-the-spot, painful readjustment of our tactical and logistical practices. Now, here we are again following the pattern of the past. Our training schedules would lead one to believe that the only climatic environment in which the next battle will be staged will be cold and wet or cold and dry.

In view of the ever-changing nature of the world situation and the unhealthy atmosphere emanating from the Middle East, is our training geared to the possibility of creating a beachhead on a desert entrant? Is our mechanized and motorized equipment of the quality and *quantity* required for exploitation of a desert beachhead? Does our tactical and logistical planning recognize that success in desert operations rests upon the breaching of the enemy line by mechanized units and exploitation of that breach by *fully motorized* infantry?

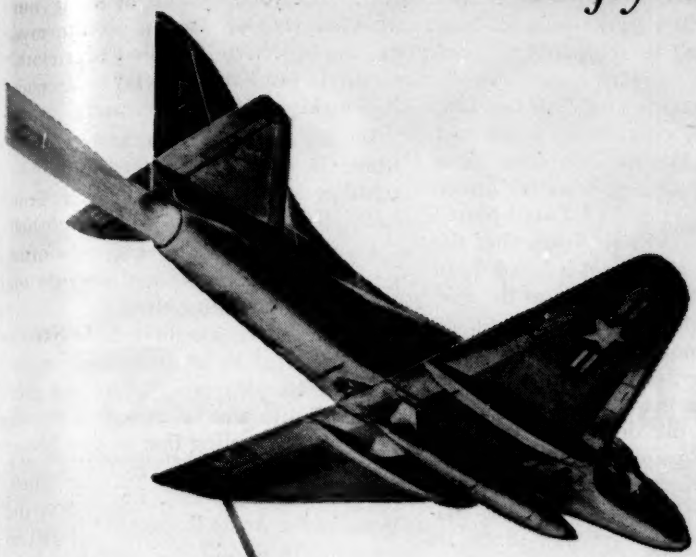
This writer holds that they do not, and that study of the excellent source material available now (Rommel's works, his biographers, etc.) will save us another possible agonizing readjustment like the one we were required to make when Korea found us unprepared.

Any other opinions on this subject?

CAPT P. D. REISSNER, JR.
El Toro, Calif.

ED: *1stMarDiv has engaged in extensive desert maneuvers by BLTs at 29 Palms. The syllabi for Senior School, MCS, cover all facets of planning under all geographical conditions.*

To fly close support for Marine riflemen



A masterpiece of combat teamwork is the co-ordination between Marine planes and ground forces. With a Marine pilot on the firing line directing the aircraft above, strikes can be pinpointed where they're needed.

Scheduled to fly with the Marines on such missions is the Douglas A4D Skyhawk. Designed as an attack bomber, this smallest of all carrier-based aircraft is also well adapted for the lightning in-out tactics of close support. Its payload—including nuclear weapons—carries a crippling punch.

Douglas A4D Skyhawk

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. . . Ref LtCol Wheeler's *Mobile Defense For Marines.* This is a subject of controversy within the military world wide. Eliminate the helicopter, and the contents are similar to the defense of the 1stMarDiv sector in Korea. However, is this a *mobile defense?*

The mobile defense, as envisioned by many today, is not tied to terrain features, restoration of the battle position, or to islands of resistance. Terrain is considered when locating our strong points to find, fix, and lead or force (through retrograde action) the enemy into the battle area in sufficient concentrations to warrant atomic fires, and to determine the areas suitable for the striking force to employ or exploit such fires. The holding of the striking force in a specific area is unthinkable. It must be so organized as to be capable of constant movement throughout the assigned sector, supplied solely by aerial delivery if need be. To tie the striking force to an operating base or assembly area is but to invite nuclear destruction.

In essence, the mobile defense of an area is the offensive defense of an area, in which we eliminate the islands of resistance, use the strong points to uncover or create targets for our one-two punch—nuclear fires and the striking force. The striking force must be trained, equipped and led for mobile warfare, roaming the landscape in defense of a sizeable area, rather than the defense of specific terrain features and the restoration of a battle position. This concept may well be compared to those of the American Indian Nations in defense of their lands in the 19th Century.

Why must we continue to speak and write of our Marine combined arms teams while advocating separate assembly areas for tanks and LVT-transported infantry? When will we learn that the truly combined arms team is based upon a marrying of forces as soon as the mission or requirement exists, and not *en route?* In the mobile defense there is no time for marrying or forming teams after contact is made. Forces must be married when the defense is assumed, unit separation employed and command vested in the commander having either the primary-type mission or the majority of forces involved. In short, let us constitute forces using the cross reinforcing method, and assign command on the basis of nature of mission or relative size of elements of each force.

LtCol E. L. Bale, Jr.

Ft Knox, Ky.

Combat Fatigue

. . . I would like to take "5" to spout off on the all important subject — reenlistment. As we all know our Corps is facing somewhat of a problem with the amount of men due for release this year. Everyone gripes about it, but what do we do? Instead of approaching the objective like good Marines we throw up our hands and say *to hell with it* — making the situation worse.

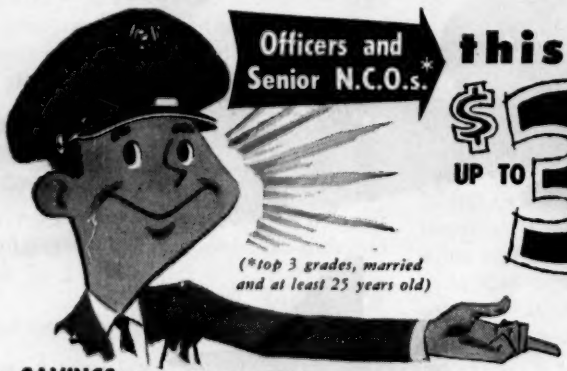
We are suffering from combat fatigue from the griping we are doing. My solution is to face the objective tactically. I make the following proposals:

Instead of trying to make the troops feel more like they are wanted, and consequently treating them like a bunch of children, we should treat them like they expected to be treated when they enlisted, like Marines. There is a greater possibility that a man will re-enlist if he has the feeling that to be a Marine you must be the best, rather than the let down feeling that he should have gone in the Army Rangers to be treated rough. We should make the NCOs feel like they are NCOs by treating them accordingly, instead of telling them they are NCOs in one breath and in the other bawl them out for doing their duty.

I don't expect this letter to change the Marine Corps, but I hope it will help in hurdling this obstacle.

SSgt J. H. Thorne

1stMarDiv



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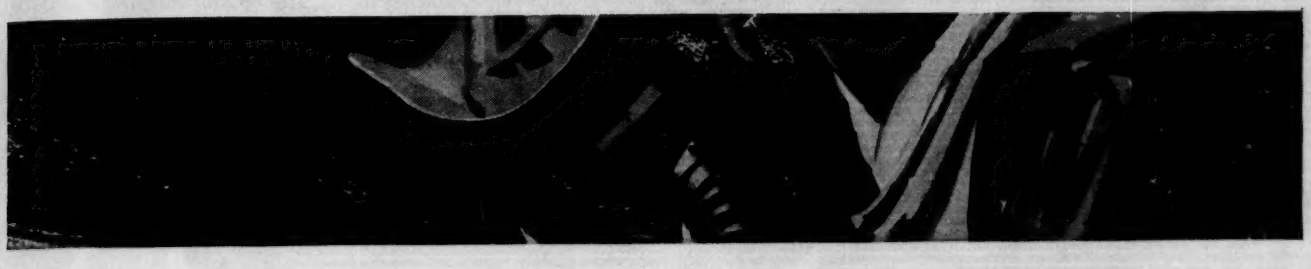

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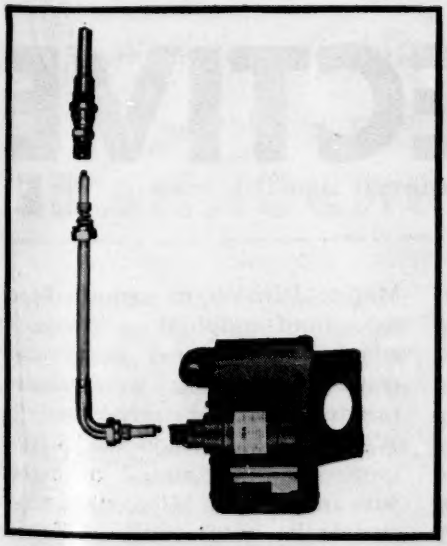

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FINAL OBJECTIVE

By Maj G. P. Averill

DURING JULY AND THE EARLY weeks of August 1951 the 1st Mar Div, in reserve for the first time since January, lay with elements at Inje and Yanggu, its artillery units in general support of the X Corps. The initial bid for peace had been made by the Communists at the beginning of July. Most offensive action within X Corps zone had ceased with the exception of daily combat patrols along the eastern rim and into the center of the Punchbowl, while certain limited objective attacks attempted to seize more defensible ground along the western rim.

Units of the 1st Mar Div underwent a vigorous training cycle, including simulated amphibious exercises. The men of these units ate hot food, swam in the Soyang Gang and the Hwachon Reservoir during off-duty hours and waited for the next offensive. They knew it was sure to come in spite of joyful letters from home concerning the peace talks, and the optimistic tones of the Armed Forces Radio announcers.

Plans were formulated in the minds of staff officers, written and presented to higher commands—plans which included the use of the Marine Division in various capacities, from amphibious troops to members of armored combat commands. Regiments were alerted, rumors grew and spread, and the War Room at Division headquarters sported another strand of barbed wire and an extra MP to stand watch outside its canvas walls. Offensive action for the Division was to come—and quickly—but not in any of the glamorous roles then under consideration.

Late in August the word was passed that the Division was to go into the attack. The 7th Marines moved

The last major offensive action in Korea. A report of the combat operations of an infantry battalion over difficult terrain against a well dug-in enemy

from Yanggu, on the west of the Punchbowl, to the eastern extremities of this terrain feature. The KMC Regt moved up along the eastern rim of the Punchbowl to the left of the 7th Marines, and the ROK division to the right of the X Corps boundary edged forward and made ready to jump off. Division artillery moved to firing positions to the east and south of the Punchbowl.

The mission that came down to the troopers of the 1st Mar Div was that of a limited objective attack. The KMCs were to advance along the eastern rim of the Punchbowl, secure it, and then make a 90 degree turn to the west and seize the northern rim. A co-ordinated attack was to be launched simultaneously along the western rim by other units of X Corps, these units to link up with the KMC Regt along the northern rim. To the west of this effort, another division of X Corps was to attack the ridgelines leading north up the Yanggu valley. The 7th Marines were to attack abreast of, and in conjunction with, the advance of the KMC Regiment and seize the ridge lines and hill tops which ran east from the rim of the Punchbowl. On order, this regiment was to continue the attack and seize the next high ground beyond the Punchbowl, an east-west ridgeline which overlooked and controlled the Soyang Gang valley and the supply route heavily utilized by the NKPA forces located in, and to the north of, that valley. The 1st and 5th Marines were to back up the line and were to be used wherever the fighting should dictate.

The proper use of terrain is often the deciding factor in battle. In the fight for the hill complex north of the Punchbowl, the enemy was well aware of this and utilized the terrain to his advantage in defensive installations. Nature had given the enemy more than an even chance—for to reach him, elements of the 1st Mar Div had first to move across an open river valley which was under observation from the west and north, and then, in order to engage the enemy and drive him from his positions, were forced to climb straight up the narrow knife-edged ridgelines. Combat in Korea had proven that, normally, once the ridgeline was gained the enemy, after a short fight, would move to the rear for he could not effectively cover the narrow area along the top of the high ground with fire. There was one exception to this general rule, which could make running the ridges costly: the terrain formation which became known as the "T." The formation existed where the main ridgeline was crossed by a single ridgeline or a series of them, the main ridgeline forming the leg of the "T," the cross ridges forming the head. On such a terrain formation the enemy could set up his defenses both on the main ridgeline and all along the head of the "T," which allowed him to stop UN forces initially with frontal fire. Then, during the approach to the head of the "T" he was able to take those same forces under heavy cross fire from direct-fire weapons, and from the flanks was also able to direct the fires of indirect-fire weapons. To neutralize such a position required much fire power and swift, co-ordinated maneuver to the flank, or flanks, at the head of the "T." Such single or double envelopment, executed in rugged terrain, and with the base of fire engaged in a fire fight not of its own choosing, can be a tricky and time-consuming action. The area, against which the 1st Mar Div needed to throw its strength, was ideal for just such time-consuming action, for it was well endowed with the "T" ridge in all its variations. The North Koreans knew this, and had set up their defenses accordingly.

Within the objective area the enemy had the advantage of observation in all respects. To the west lay Hill 1052. From its summit and from the finger ridges running south and east from it the enemy could observe the movement of troops and material for a distance of 5,000 meters. The first objective of the 7th Marines, Hill 673, gave the enemy direct observation over the Soyang valley and the approaches to the hill itself. Hill 749, a thousand meters to the north was backed up by an east-west ridgeline which formed a "T"—defended heavily and which was to cost the Division much in blood. To the west of Hill 749 lay Hill 812, a barren, wind-swept knoll, marked by a gigantic rock formation—a stone spire which rose up some 12 feet in the air directly west of the "T" formed by Hill 812 and the east-west ridgeline which ran from Hill 749. West along the ridgeline from "the Rock" were two enemy strong points which looked directly into the defenses of Hill 812. Hill 980 was completely dug

Terrain in the objective area looking north from the Punchbowl

in defensively, with a huge bunker on its crest. Still farther to the west was Hill 1052, a series of bunkers, fire communications trenches, mortar emplacements and mountain gun emplacements. 1052 covered the approaches to Hills 980 and 812 by direct-fire weapons and from its heights the enemy could direct and control the fire of artillery and heavy mortars. Strangely enough, neither Hill 980 nor 1052 were included as objectives in the plan of attack which was handed down from higher echelon—a fact which is beyond the realm of reasonable thinking. The retention of both these positions by the enemy was to make the attack extremely difficult, and to render approaching positions, once taken by Division units, almost untenable.

Initially enemy resistance within X Corps zone of action was light, although the KMC Regiment suffered heavy casualties from antipersonnel mines. The advance of both regiments of the Marine Division was considered satisfactory, and it appeared that this was to be a two regiment show at most. The attack continued in a highly successful manner until the 7th Marines were ordered to cross the valley and assault Hills 673 and 749. Along the line, formed by these hills, the enemy had elected to remain and fight it out—which he did, with devastating effect. What had once seemed possible for one regiment to secure, in reality was to take the combined efforts of all the infantry regiments of the Division, and was to involve some of the heaviest and most vicious fighting that elements of the Division had seen since the bloody battles of the Naktong. Since this narrative will deal with but one of the battalions which were thrown into the contest, the remainder of the article will deal only with that unit, the event which led up to its commitment to battle and the actions of this battalion during the fight for its assigned objective.

By 14 September 1951 the NKPA forces dug-in along the high ground south of the Soyang Gang had so badly mauled the 7th Marines that it was necessary to relieve that regiment. Units of the 1st Marines had relieved units of the 7th in place, and in the area of Hill 749 had executed a passage of lines which had put them right into the teeth of a North Korean regiment. The fighting throughout the 1st Marines' zone was bitter, and the casualty rate ran high. The hill complex had already ground up one regiment and was tearing rapidly into another. On 15 September the 5th Marines were ordered into the attack—to relieve pressure on the 1st Marines and to secure objectives on the left of the 1st Marines' zone of action.

At 1600 15 September, after issuance of a warning order by the CO, 5th Marines, the 2d and 3d Bns of that regiment moved from positions to the east of the Punchbowl to an assembly area in the rear of the zone of the 3d Bn, 1st Marines. Both battalions had closed the assembly areas by 2300. By 2330 troops of those battalions had slipped into sleeping bags and—in spite of the crash of incoming 120mm mortars and the answering boom of the outgoing rounds of the 1st Marines' 4.2-inch mortars—managed to get a good night's sleep. At 2400 the regimental operation order for 16 September was received at the CP of the 2d Bn. At this time, shivering from cold and excitement, the unit commanders and staff huddled together under the light of a lantern, received the attack order from the battalion commander. They traced the objectives and scheme of maneuver from the single overlay available, and went stumbling back through the wet paddies to awaken platoon leaders and staff sections to get set for the day which was then upon them.

The orders for the 2d Bn were as follows: "With one rifle company relieve How Company, 3d Bn, 1st Marines, in place, and report when relief has been effected. Upon effect of relief make physical contact with elements of 3d Bn, 5th Marines and defend best terrain vicinity present position, prepared to continue the attack on order. Attack and seize Hill 812, Objective DOG, consolidate that position, defend best terrain vicinity of that position. Upon seizure of Hill 812 make patrol con-

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Maj G. P. Averill is a career infantryman who has served in every capacity from squad leader to battalion commander. During WWII he served with 2d Parachute Bn in all its operations in the SoPac and later joined the 5th Mar Div. In Korea he was S3 of the battalion of the 5th Marines whose action is described here. His actions in combat have earned him the Silver Star, Legion of Merit, Bronze Star, Commendation Ribbon and the Purple Heart. After returning from Korea, Maj Averill was an instructor in tactics, Junior School, MCS. He recently completed a tour with 3d Bn, 6th Marines (which he commanded for a time) and is now the Marine Corps Liaison Officer, MCDC, with the Army's Board #3, CONARC, Ft Benning, Ga.

tact with elements of the 1st Marines vicinity Hill 749. Patrol north to the Soyang Gang daily." (For the objective area, boundaries, critical terrain and scheme of maneuver see Figure 1.)

Dawn on 16 September arrived cold and clear. The weather was excellent for both ground and air operations. The leading platoon of D Co moved out of the assembly area at 0605 and that company commenced the climb to relieve H Co, 1st Marines. The battalion command group, the heavy machine gun platoon and a section of 75mm recoilless rifles moved with them. By 1100 16 September the relief had been effected and D Co had taken up its defensive positions. The relief and assumption of defense was without incident, with the exception of sporadic artillery and mortar fire which fell close to the D Co position during the relief.

Fox Co had been designated the unit to assault and seize Hill 812 in the battalion operation order. This company was to move out in the attack following the relief of How Co, 1st Marines, and was to be supported in the attack by the fires of the heavy machine guns and the 75mm recoilless rifles from the Dog Co position. Although Dog Co was in position to support the attack at 1100, it was nearly 1200 before Fox Co moved out of the assembly area, and 1300 before the assault platoons of that company reached the valley leading to the objective. This delay was to prove costly before the day was over.

At approximately 1700 Fox Co came under heavy small arms, automatic weapons and mortar fire from positions on the approaches to 812.

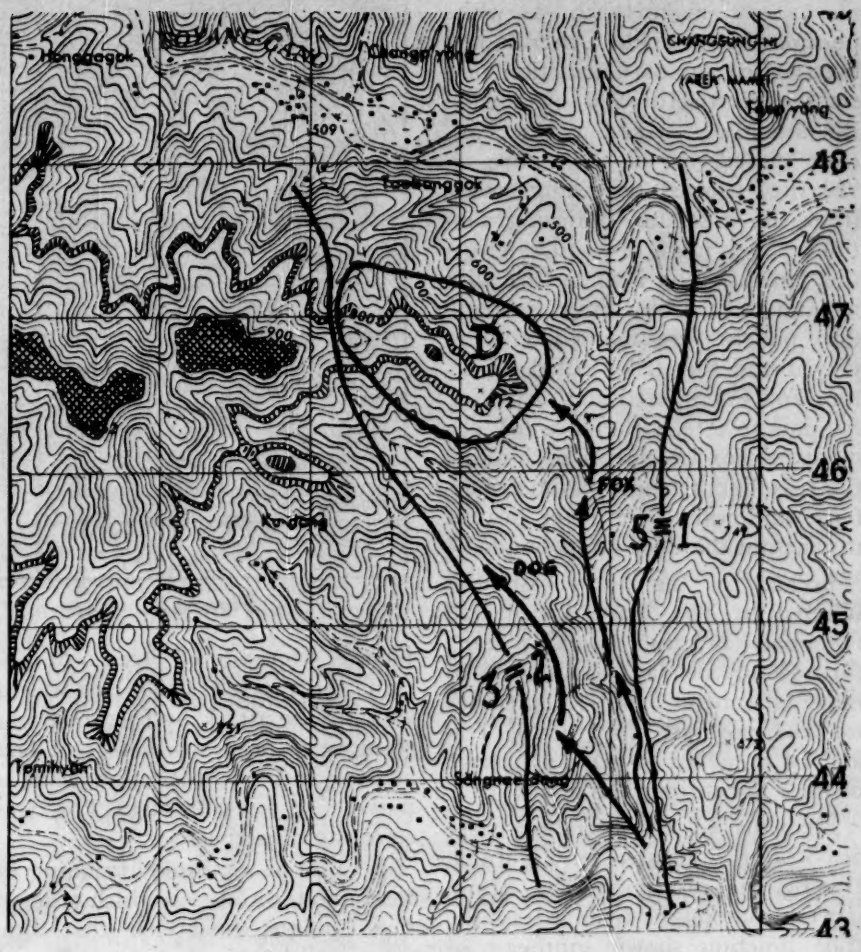


Figure 1

In the fire fight that followed two platoon leaders were wounded and the toll of dead and wounded within these two platoons grew steadily as the afternoon wore on. The advance toward the objective bogged down momentarily, and then at 1915 drove forward until one platoon had gained the high ground along the ridgeline to the east of Hill 812. From the Dog Co position other troop units could be seen approaching the objective and, in order to identify them, Fox Co was asked to give the positions of its forward units. Positions relayed by radio were not realistic, for the Fox Co CP was on low ground and in thick foliage and members of the command post could not accurately determine front line positions. In an effort to pin-point the positions of the Fox Co platoons a mark was called for. The mark used indicated clearly the position of the troops. Unfortunately for all concerned the

The 5th Marines move out toward the Punchbowl area

mark was made with a white phosphorous grenade. Aircraft had been called in for destruction missions against Hill 980 by the 3d Bn, 5th Marines, and as those aircraft pulled out of their runs on 980 they spotted the white smoke from the grenade. Believing that this was the mark of another target they quickly took it under fire with napalm and machine guns. Recognition panels were immediately displayed and the strike called off before Fox Co suffered any casualties. As darkness fell, the forward elements of Fox Co pulled back along the ridgeline, set up a perimeter defense and waited for litter bearers to take out the dead and wounded.

Because of the heavy casualties suffered by Fox, Easy, which had remained in the assembly area throughout the day, was alerted to move forward by 0400 17 September to take positions in rear of Fox and be prepared to make a passage of lines to continue the attack.

Elements of the battalion were disposed as indicated in Figure 2. During the afternoon, the 81mm mortar platoon had moved to the trail junction shown southeast of Hill 812 and were able to furnish fire in support of the attack by late evening of 16 September. The battalion command group was located on the high ground southeast of the Dog Co position, with its OP at Dog Co. Wire communications to 5th Marines were in operation by nightfall. Radio remained primary means of communications to the companies of the battalion. Physical contact with 3d Bn, 5th Marines was made and maintained throughout the night.

There was no enemy action during the night of 16 September 1951 within the zone of the 2d Bn. Brilliant moonlight bathed the area, illuminating the hills and ridgelines so well that movement on them could be immediately detected. At 0145 the regimental operation order was received by means of telephone. The CO 5th Marines ordered the 2d Bn to attack at 0400 17 September and to seize Objective DOG, Hill 812, by nightfall of that day. The 3d Bn was to remain in position and support the attack of the 2d Bn by fire. The regimental order was relayed to the battalion commander who ordered Fox Co to continue the attack at 0400; Dog was to support the attack by fire; Easy was to move to positions in rear of Fox at 0400 and, on order, to execute a passage of lines through Fox and seize the objective.

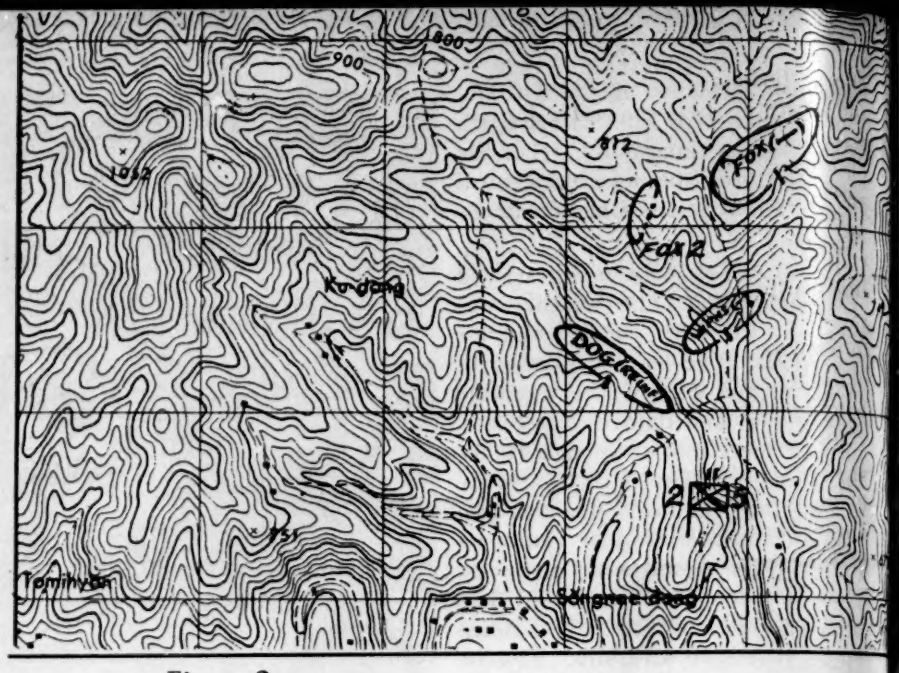


Figure 2

Because of a misunderstanding in the radio transmission which ordered Fox Co into the attack, that company was late in jumping off, and it was nearly 0700 before it moved forward. Fortune smiled briefly on that company, however, for at first light, from their concealed positions along the ridgeline, members of that company were able to watch the North Koreans emerge from their fighting holes and bunkers, wash, cook chow and eat. Artillery was delivered on those personnel with good effect, thereby reducing to some extent, at least, the combat efficiency of the enemy soldiers.

At first light, the CO, 2d Bn radioed Fox Co regarding the delay in the attack, and as quickly as the company could be organized the attack was made. At first, surprise gave this company an advantage, and it was able to advances with light losses until the leading elements of the company crossed the saddle and started up the ridgeline towards the objective. Here the North Koreans were well emplaced in machine gun positions and bunkers along the northeast-southwest ridgeline which formed Hill 812. This ridgeline formed the head of a "T," and the ridgeline along which Fox Co was attacking, the leg. Cross fire from automatic weapons and small arms swept across the open ridgeline, inflicting heavy casualties on the Company's already depleted ranks. Caught in the cross fire, and under observation from Hill 980 and 1052, from which the enemy was delivering accurate and deadly mortar fire, the attack of Fox Co came to an abrupt halt. At this time Easy had arrived in position behind Fox. At 0850 Easy was ordered to execute a passage of lines and continue the attack.

During the attack of Fox Co, the battalion command group had operated from the adjacent ridgeline, some 1,200 meters directly across the valley from Hill 812, and within the perimeter set up by Dog Co. Tied in with, and northwest of D/2/5, How Co, 3d Bn, 5th Marines was pinned in position by mortar fire from Hill 1052 and by machine gun fire from enemy positions along the ridgeline some 800 meters to the front. The heavy machine guns of the 2d Bn were positioned with Dog Co, and commenced firing into the flank of the enemy strong point on Hill 812 as soon as Fox Co jumped off in the attack. Support fires from the same position were delivered on the target by the 75mm recoilless rifle section. The strike of the bullets of the machine guns could be clearly seen from the battalion OP, as could be the explosion of the 75mm rounds. This fire appeared to have good results in keeping the enemy fixed in position and radio transmissions from Fox Co substantiated these assumptions. The

enemy, however, was quick to locate the source of this harassment, and it was not long before his forward observer on Hill 1052 had the range and commenced dropping 120mm mortars in the vicinity of the gun emplacements resulting in 4 casualties within the HMG platoon. Because of the location of the enemy forward observer and the accuracy of the mortars, effective support from battalion weapons was neutralized.

When Easy Co passed through Fox at 0850, it was reinforced by the 2d Platoon of Fox Co. This platoon, during the night of 16 September, had become separated from the remainder of the company and had remained by itself throughout the hours of darkness, although it had maintained radio contact with its parent organization. With the coming of dawn the platoon leader found himself in thick foliage, well concealed, and a scant 400 meters from one of the largest enemy bunkers on the left flank of Hill 812. The platoon had moved forward during the attack of Fox Co, and when Fox had been stopped by fire, the platoon had closed within 100 meters of the enemy position—still undetected. It was at this point that control of that platoon was given to Easy Co.

The CO of Easy Co, after observing the heavy fire being delivered on Fox Co, requested that an air strike be run against Hill 812 and Hill 980 prior to his attack. Air was requested, but did not appear on station at the time specified. Two hours after passing through Fox, Easy Co was still under heavy fire from the enemy, and had progressed no more than 100 meters forward. When air did not appear at 1100, the CO, 2d Bn ordered Easy to make a determined drive for the objective, utilizing the fires of mortars and artillery to cover the advance, and to throw the 2d Platoon of Fox against the flank as soon as the fire lifted. This word was passed to the platoon leader of the Fox platoon and almost before supporting fires had been lifted from Hill 812 his platoon was in the position. Thirty-six minutes later, after grenade duels and hand-to-hand combat, the platoon secured the key enemy emplacements on Hill 812. (See Fig. 3.)

Once these strong points had been

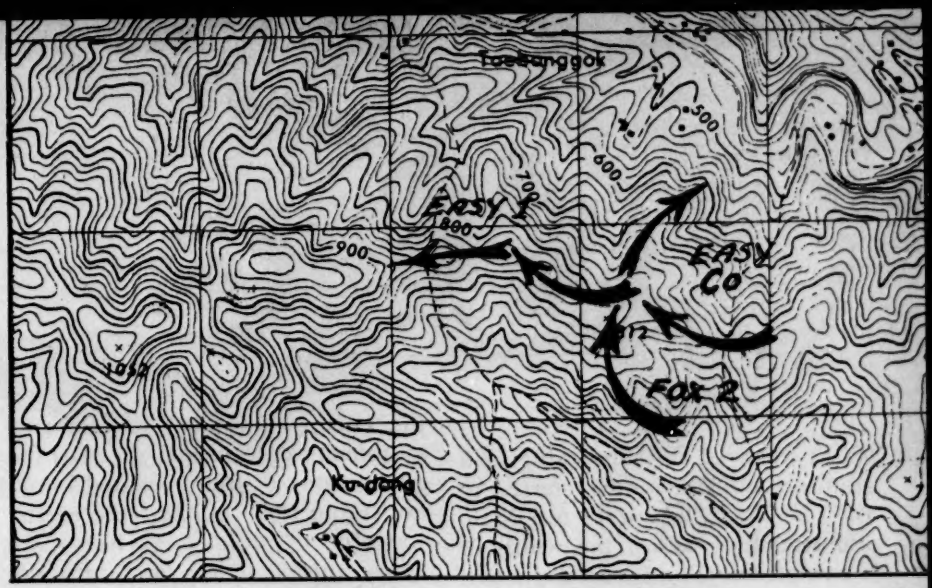


Figure 3

knocked out, the 1st Platoon, Easy Co drove the enemy from his right flank positions, moved through the Fox platoon and attacked westward along the ridgeline leading towards Hill 980. With the exception of long-range machine gun fire delivered from the strong point at Hill 980, Easy Co was able to move forward against negligible resistance. By 1430 all of Objective DOG had been secured, and Easy Co had advanced to eastern limits of Hill 980. At this time permission was requested from CO, 5th Marines to continue the attack and seize Hill 980, but this request was not granted because of instructions from higher authority. Easy Co was then ordered to withdraw to a defensive position 600 meters to the rear of its most forward point of advance. All units of the battalion were in night defensive positions by 1700.

Although Hill 812 had been secured ahead of schedule, and although friendly forces now controlled the Soyang Gang valley, the casualties were not to cease, nor was the enemy ready to give up 812 without another try. The enemy to the north, across the Soyang Gang remained relatively quiet during the period 17-19 September and patrols from Fox and Easy Co made no contact even as far forward as the north bank of the river. The enemy to the west, however, was active and vicious. He struck at Easy's western outpost at 0430 18 September, forcing it to withdraw and struck again at 0845. No concentration of enemy forces was evident and the enemy withdrew after a hot fire fight. Enemy mortar fire and fire from direct-fire 76mm mountain guns was heavy throughout daylight hours causing casualties in both Fox and Easy Companies. These casualties were to continue for as long as the position was held, for from positions on Hill 980 and Hill 1052 the enemy could direct the fire of mortars, machine guns and field pieces along the ridgeline held by friendly troops and into the defenses set up there. So heavy was this fire that no positions could be constructed on the south side of the ridge, with the result that all defenses were, of necessity, dug on the northern side — a situation which rendered the defenders vulnerable to attack from two directions. Movement on Hill 812 was restricted to its reverse slope, for here again friendly forces were under observation from Hill 1052 and Hill 980 during daylight hours. Snipers, as well as heavy weapons, took a toll of dead and wounded as Marines of the battalion moved about in individual positions. To add even more trouble to an already confused situation, the 3d Bn, 5th had made no advance along its ridgeline during the attack, and now remained in position with elements spread over 2,000 meters of front—not physically tied in with the 2d Bn — a situation of definite advantage to the enemy and one extremely dangerous for the Regiment as a whole. The enemy was not long in discovering this, and in less than 24 hours acted to press his advantage.

On the night of 19-20 September the battalion held defensive positions as indicated in Figure 4. The 1st Platoon of Easy Co held positions

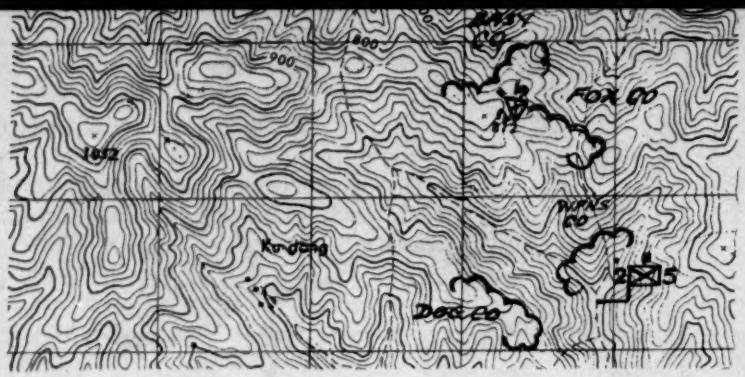


Figure 4

which involved the outposting of a granite spire, previously referred to as "The Rock," about 12 feet high, and stretching across the width of the ridgeline. The enemy outposted the western side of "T Rock," the 2d Bn the top of it and the eastern side. Because of the heavy fire from Hill 980 and 1052 all positions were dug in on the northern side of the ridge leading west to "The Rock."

At 0200 20 September, intense enemy mortar fire commenced falling all along the defensive line and particularly in the positions held by the 1st Platoon, Easy Co. These fires continued until 0230. At that time an enemy force, estimated as at least one company in strength, started around the northern side of "The Rock" and were brought under fire by the defenders. The enemy attacked with grenades and small arms fire at close range. The Easy Co platoon attempted to dislodge this force by counterattacking along the narrow ridgeline, and in the ensuing action the platoon leader was severely wounded. The enemy continued to press forward fiercely and forced the defending platoon to withdraw to positions on the left flank of Hill 812. Artillery, 81mm and 60mm mortar concentrations were delivered in heavy volume along the ground evacuated by friendly troops but, in spite of this, the enemy continued his forward movement and set up light machine guns in one of the evacuated bunkers. From these bunkers the enemy was able to lay down a heavy fire across the ridge top and into the front lines of Easy Co causing heavy casualties.

At 0500 the 2d Platoon of Fox Co was alerted and brought forward to the reverse slope of the left flank of 812, to bolster the line and to be utilized as a counterattacking force whenever the opportunity arose. At 0545 the enemy had moved to within 75 meters of the left flank positions of Easy Co and was engaging the troops emplaced there with submachine guns and grenades. Fifteen minutes later he closed the position and assaulted with a shower of hand grenades, demoralizing and forcing the withdrawal of certain personnel within the battle position. Encouraged by this obvious weakening of the line, the enemy drove towards the crest of Hill 812, increasing the intensity of the grenade barrage as he advanced.

During the enemy attack and the close-in fighting around the bunkers on the left of Hill 812, the 2d Platoon of Fox Co stood waiting to be committed. As enemy troops appeared on the crest of the hill the Fox platoon was ordered into action. From approximately the same positions from which they had forced the enemy on 17 September, they delivered a hail of grenades, automatic weapons and small arms fire on the assaulting enemy at point blank range. The surprise and the shock effect of this fire stopped the enemy advance completely and forced him into retreat along the ridgeline to the west. Again he occupied strong points east of "The Rock" and continued to fire on friendly forces. Several 3.5 rockets were brought forward and fired into these strong points and machine guns along the line were sited to fire into the embrasures of these bunkers, neutralizing the weapons emplaced therein and forcing further withdrawal of the enemy. In the light of early dawn one squad of the Fox platoon was sent against the enemy in a counterattack. Under supporting fires of the rockets and machine guns this squad was able to clear the remainder of the ridge line and were a hundred yards into enemy territory beyond "The Rock" by 0630. The remainder of the 2d Platoon, Fox Co was sent forward in an effort to further engage the enemy, but no engagement was forthcoming. All action had ceased and Fox 2 withdrew to positions previously held by Easy 1.

With the coming of full daylight 812 stood bleak and bare, its rocky sides beaten to a brown powder by high explosives, the northern slopes littered with enemy dead. The Marines within the positions peered through eyes heavy with weariness towards "The Rock" and waited for possible enemy reaction. At 0800 Dog Co, as a reinforcing element of the 3d Bn, moved in to take over the position. The final objective was secure. The war of movement had ended—the war of position had begun.

USMC

★ ★ ★ ★

Aye, Aye!

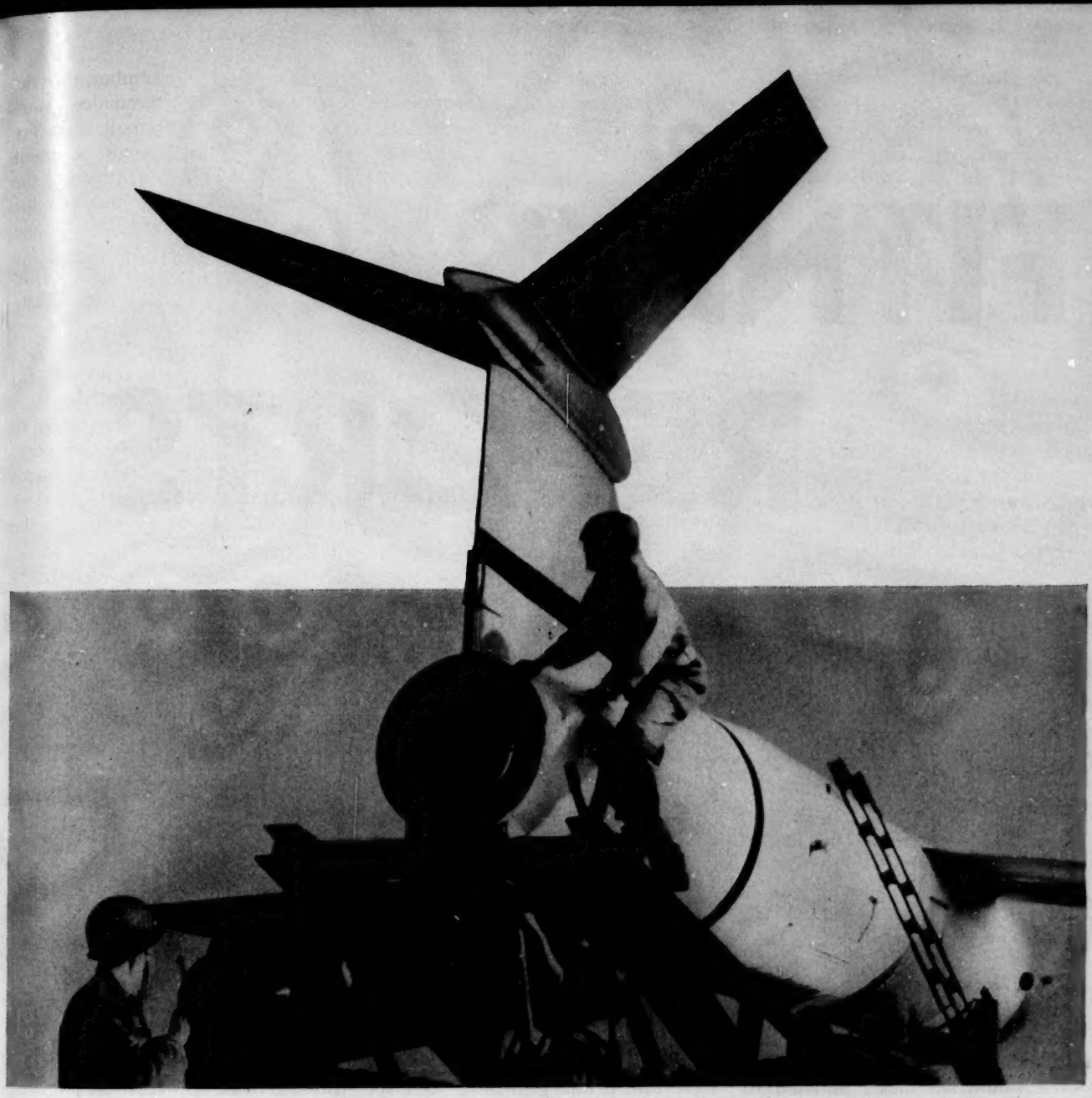
JUST BEFORE World War II, a Summary Court-Martial, convened on board the USS *Maryland* to try a seaman first class on the charge of Drunkenness and Disorderly Conduct. The seaman had been apprehended in the galley at 3 o'clock one Sunday morning. He had returned to the ship from authorized liberty on the eleven-thirty boat.

Because drinking aboard ship is a much more serious offense than returning aboard under the influence, the court tried to establish the man's condition when he returned from liberty. They questioned the Officer of the Deck. He testified that the sailor returned with a liberty party and that he didn't notice anything unusual about the man's actions. Finally the court asked the Officer of the Deck if he had anything else to say that might help the court.

"Why yes," the Officer of the Deck replied, "when he came over the side, he saluted and said, 'Call me early, Mister, I'm Queen of the May.'"

Col W. F. Prickett

(The GAZETTE will pay $10.00 for each anecdote published. Submissions should be short and pointed.)



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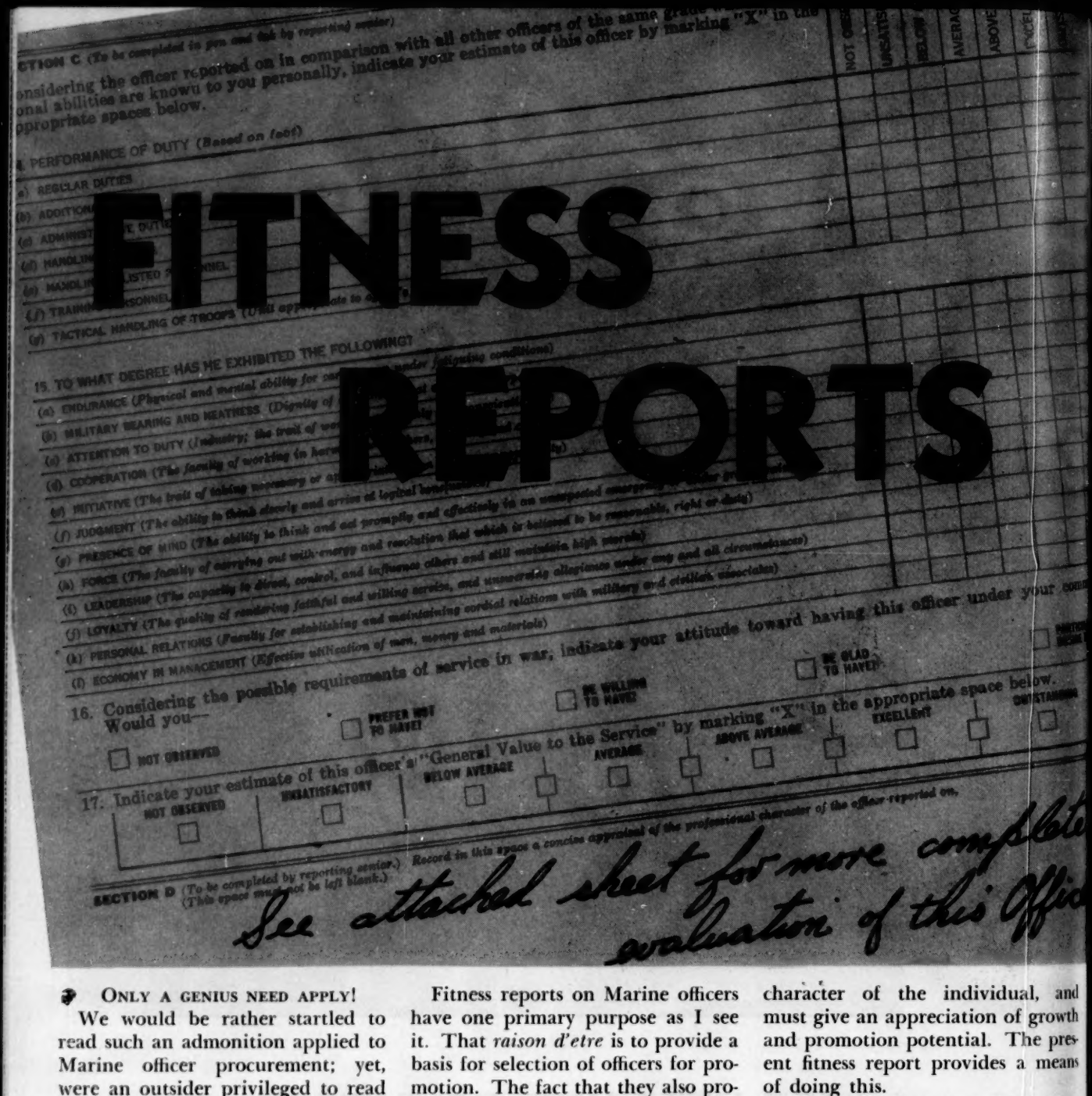
Martin engineering service today covers every aspect of the customer's requirements for effective operation and maintenance of the product. This includes packaging, delivery, customer training, field service and contractor maintenance.

MARTIN


FITNESS
REPORTS
15. TO WHAT DEGREE HAS HE EXHIBITED THE FOLLOWING?
16. Considering the possible requirements of service in war, indicate your attitude toward having this officer under your
Would you—
PREFER NOT TO HAVE
BE WILLING TO HAVE
BE GLAD TO HAVE
17. Indicate your estimate of this officer's "General Value to the Service" by marking "X" in the appropriate space below.
UNSATISFACTORY
BELOW AVERAGE
AVERAGE
ABOVE AVERAGE
EXCELLENT
See attached sheet for more complete
evaluation of this Offic

ONLY A GENIUS NEED APPLY!

We would be rather startled to read such an admonition applied to Marine officer procurement; yet, were an outsider privileged to read Marine officer fitness reports, he would swear that the statement is true. According to these reports, almost everyone is "Excellent," or "Excellent to Outstanding!" A few are merely "Above Average!" Merely above average! A moment's thought will tell us that the great bulk of officers in any particular group must be average when compared with each other. To say otherwise is an obvious contradiction in terms. Yet we find that no Marine officer (or only a few, perhaps, of the very worst grade) are "average." Something should be done about this state of affairs; but before we discuss possible solutions, let us look at some pertinent background facts.

Fitness reports on Marine officers have one primary purpose as I see it. That *raison d'etre* is to provide a basis for selection of officers for promotion. The fact that they also provide a running account of the officer's performance of duty makes for a complete record on each individual and is of great assistance in assignment to duty; nevertheless, these functions are secondary.

If we agree that the fitness reports must provide a basis for selection for promotion, we next ask what is required to accomplish this objective. Obviously, the report must show an evaluation of current performance of duty, must describe the character of the individual, and must give an appreciation of growth and promotion potential. The present fitness report provides a means of doing this.

This sounds very simple and uncomplicated; why, then, cannot each reporting senior simply mark down his judgments in accordance with the written directions for making out fitness reports? Primarily because the making out of the fitness report is a subjective process. It is unavoidable that the report is compounded of two ingredients, the characteristics of the person marked and the judgments, biases and enthusiasms of the marking senior. It is also a fact that unit loyalty and the ingrained leadership trait of loyalty to one's subordinates will in almost every case force a commanding officer to believe that his outfit is the best and that his officers are

By Col R. E. Cushman, Jr.

the finest. And, of course, we want hard chargers who are bursting with enthusiasm and pride in their unit and their officers. That is the only way to command a unit if it is to win battles. Furthermore, it is human nature to start each officer out at the top level and only lower his marking when he really goofs off. This forms sort of an equivalent, in the fitness report field, to the precept that each man is considered innocent until proven guilty. On the other hand, ideally every officer should start out being considered average when he reports in to a new senior and then be lowered or raised in accordance with his demonstrated performance. To sum up then, we are faced with the problem that desirable leadership attributes in our commanding officers make it difficult for them to be objective and produce the undesirable byproduct of fitness reports indicating that about 90 per cent of all officers are in the upper 10 per cent of their group — a manifest absurdity.

This leads us to a more detailed consideration of our present difficulties. It can readily be seen that this continuing shift of marks into the upper part of the scale has very bad end results. First, of course, is the fact that almost everyone is at the top and that this poses an almost impossible task for selection boards. They can pick out the very few that have straight "Outstanding." They find it is easy to spot the few who have had disciplinary action or very low fitness reports. At that point the boards probably find that perhaps 90 per cent of all the group is left, and they are all marked "Excellent," and the boards have to select a portion of these and pass over a portion. Solomon himself could not separate sheep from goats when all bear the same outward marking. Personal knowledge by members of the board may work in the rarified atmosphere of selecting a few colonels for general officer rank, but it cannot substitute for adequate fitness report markings when the selection involves scores or hundreds, as in the lower ranks.

Second, the difficulty is compounded by the fact that reporting seniors soon become aware of the artificially high markings in vogue and know that to mark an officer literally, in accordance with the directions and the actual meanings of the rating words, is to sign his death warrant. When everyone else is getting "Excellent," it becomes a real blow to mark a man as "Above average." Yet according to the literal meaning of the words, the phrase "Above Average" constitutes a kudo and ought to be received with pride! As a consequence, even those reporting seniors who are aware of the trouble and would like to correct it, dare not, lest they injure some fine subordinate officer.

Third, as more and more markings are crowded into the upper bracket, it becomes impossible for the marking senior to differentiate between his officers. On a small scale, he runs into the same difficulty the selection boards have on a big scale. I am afraid that, faced by this problem, a good many marking officers tend to take the easy way out. Just mark good old Joe Blow straight "Excellent." And John Doe? Well, actually, he is just a shade better than Blow, but since it cannot be shown on the fitness report — why, just mark him straight "Excellent," too. Finally, the feeling grows up that paragraphs 16 and 17 of the fitness report (those portions to be marked with an "x" to show performance of duty and character traits) are useless. This puts the load on Section D to actually differentiate between officers to any degree at all. Section D is the portion which is to be filled in by written description. I fully believe that this part of the report is now carrying the *whole* load; that selection boards probably rely almost exclusively upon it. (I am guessing, never having been on a board, but logic indicates it could not be otherwise.) Yet it is a space of only 2 x 8 inches, and the writing must be by hand. This is the medium through which the destiny of each officer is decided!

Finally, among the troubles encountered with the present report is the fact that it is almost impossible to evaluate the *marker*. As mentioned earlier, one of the two important ingredients of the report is the subjective feeling of the reporting senior. Some are "tough" markers, some are "easy." In earlier days in the Corps, members of selection boards knew the reporting seniors, and of their own knowledge had the tough and easy ones tabbed. They could compensate accordingly. And, of course, this compensation *must be made*. For if officers are in competition with each other for promotion, great injustice can result if the standards of the marking seniors are not equated. Now, what method of marking gives no inkling of the feelings of the marker? The check off list where the marker simply checks opposite words which approximate his judgment of the junior. Yet this is the system used for paragraphs 16 and 17 — the bulk of our fitness report. The only way in which one can obtain an insight into the mental processes of the marker is to read his written word. Only the pitifully small Section D now provides this opportunity.

There is another problem sometimes encountered in marking which I would like to mention. The process of evaluation is inherently one of comparison. The question is, comparison with whom? Obviously it must be with officers of the individual's rank, approximate time in grade, and, in some respects, functional field. But is this comparison to be with those officers whom the reporting senior knows throughout the Corps, with just those in his own command, or with some hypothetical ideal? I think that the answer is, it must be the first and last of these. We all have formulated our opinions of what an ideal Marine officer should be, particularly with respect to those leadership and character traits that are common to all good officers of whatever rank. This opinion is bound to be mixed up inextricably with our comparison of any particular officer to all of those in his group whom we know within the Corps. We must avoid, I feel, restricting our comparison solely to those officers of the same group within the reporting senior's command except in special cases such as the marking of students. To do so means that we will have too small a group for good comparison; in a small group of only 3 or 4 officers, for example, it is easily possible that all might be way above or way below average. Comparison just within this small group would result in distorted markings. This may seem obvious, but I have heard the oppo-

site seriously argued: that the *only* comparison which should be made is with the officer's immediate colleagues in the reporting senior's command!

And now the question is — what should be done about all this? My remedy is relatively simple and can be put into effect by each marking senior on his own initiative.

First, Section D should be greatly expanded. I believe that Headquarters, Marine Corps, should require that a 300-500 word description be written about each officer reported on. This amounts to between one and 2 pages of double-spaced typewriting. Is this too much to ask of a reporting senior; that he devote this much attention to what is one of the most vital functions of any senior officer — and to what is the most vital concern of each individual reported on? In lieu of a new form, or a requirement by HQMC, I know of nothing to prevent this enlargement of Section D by the simple expedient of attaching the expanded remarks. It seems to me that this suggestion is worth serous consideration by all commanding officers.

Second, instead of the very few little boxes now available for checking off words which represent the marking officer's judgment, there should be a scale of at least 25 gradations reaching from "Unsatisfactory" through "Outstanding" (it is not necessary to have degrees of failure so the scale need not extend through "Unsatisfactory"). It will then be possible to differentiate among officers in a command who would appear to be exactly the same if marked in accordance with the present system. Once again, in lieu of a new form, there seems to be no reason a marking senior cannot place his markings in the squares as though a scale were there and state in a note in the space between paragraphs 16 and 17 that he has done so. It is strongly recommended, however, that a new form be devised with more width allotted to the space for these markings and a scale printed across it.

Third and last, I believe that HQMC should periodically re-emphasize that fitness reports are to be marked literally and redirect attention to the literal meanings of the descriptive words employed, and order that they be used accordingly. It would help greatly if the meanings of these words were placed upon the fitness report form itself; at present, one must refer to the PRAM to review these definitions. How many of us do that faithfully each time we make our fitness reports? If we did, we would find this meaning given for "Excellent," in which category I am convinced most officers are placed: "Exceptionally efficient; qualified to a degree *seldom achieved by others in his grade.*" (Italics are mine.) And here is what is says about "Above Average," a category which now induces despair among officers so marked: "Highly qualified and efficient."

Here again each marking officer can do something on his own. He must not let loyalty to his subordinates and unit transcend loyalty to the Marine Corps as a whole. His day-to-day enthusiasm for his subordinates must be transformed at fitness report time into a painstaking evaluation on as objective a basis as possible. I recommend that he mark his fitness reports literally *and* append a statement to the effect that this has been done, emphasizing it by quoting the approved definition of the word used to describe the officer's "General Value to the Service" (paragraph 19 of the form). Complete the statement by requesting that markings be equated as appropriate. For example:

"I have marked this officer in the full literal sense of the instructions in paragraph 3018, PRAM, and find his 'General Value to the Service' to be "Excellent," meaning 'Exceptionally efficient; qualified to a degree seldom achieved by others in his grade.' I have carefully weighed this marking. It should be considered in equating these marks with those of others."

I believe that this statement, coupled with a sincere and lengthy written appreciation of the officer, would not only protect his interests but would single him out and place him *above* the unfortunate officers who have all received a straight "Excellent" by a reporting senior who has fallen into the present strait jacket method.

While my statistics are strictly guesswork, I truly believe that we must do something along the lines recommended above if we are to prevent our fitness reports from becoming meaningless, risking the morale of those being marked — and that includes all of us! USMC

★ ★ ★ ★

Medal Miscellany

AS A GEM AMONG LITTLE KNOWN FACTS about our US decorations, the now extinct *Military and Naval Digest* of March 1937 had this interesting item under "Professional Notes."

PURPLE HEART AUTHORIZED FOR CCC

"Recently published changes to AR600-45 provided eligibility to officers and enlisted men who have served, or are serving with the Civilian Conservation Corps for award of the Purple Heart and Soldiers' Medal. Under War Department interpretation, the Purple Heart decoration will be considered as a junior Distinguished Service Medal and will be awarded for distinguished service in time of peace or war. The Soldiers' Medal will be awarded for outstanding acts of heroism on the part of military personnel not in actual conflict with the enemy."

The next month, this same magazine had this in print on the same subject:

PURPLE HEART

"In response to a protest by the World War veterans who are holders of the Purple Heart, the War Department has announced that the recently published changes to AR600-45 which provided eligibility to officers and enlisted men who have served or are serving with the Civilian Conservation Corps will be rescinded. As this action will leave the Army without a junior Distinguished Service Award, which has been considered desirable, it is probable that a study will be made of a new decoration to fill the need."

Col H. Nickerson, Jr.

(The GAZETTE will pay $10.00 for each anecdote published. Submissions should be short and pointed.)

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in brief

Historical Branch, G3, HQMC has a number of copies of Robert L. Sherrod's *History of Marine Aviation in WWII* for free distribution to anyone who served in Marine aviation organizations during WWII. Requests should be sent to Combat Forces Press, 1529 18th St. NW, Washington, DC. The GAZETTE Bookshop has the book on sale for anyone not eligible for a free copy.

North American Aviation has perfected a new life saving device that automatically inflates a pilot's "Mae West" upon contact with water. The entire assembly weighs about 5 oz. and will inflate a life jacket within 15 seconds after immersion in water. It consists of a cap, piston, spring loaded plunger, soft rubber flapper valve and an effervescent pill that is about the size of an Alka Seltzer tablet. As the pilot drops into the drink, water rushes through the tube in one end of the metal cap, forcing the rubber flapper valve open. The water passes through the valve and contacts the tablet, causing it to dissolve and produce a cloud of gas. The gas pushes the flapper valve back into place at one end of the chamber, forcing the piston to strike the operating lever. This fires the CO2 cartridge and inflates the jacket.

The device cannot be set off accidentally because the flapper valve holds the opening closed until it is forced open by the pressure of a body of water.

Marking the advent of what has been termed a new era in ship-building, a new landing craft built almost entirely of Douglas Aircomb (a structural paper honeycomb impregnated with a phenolic resin) was launched recently at Terminal Island, Calif.

The hull of the new craft (right) is a departure from conventional design. It consists of the Aircomb core sandwich construction, reinforced with a woven fiber-glass inner and outer skin. The hull deck slats, aft deck coaming and bulkheads are all reinforced plastic. Described as unsinkable, the 36-foot long, 9-foot beam craft is the first production model of its kind.

The Navy Dept recently announced that it has awarded a contract to Piasecki Aircraft Corp to build an experimental vertical lift aircraft nicknamed the "Sea Bat." It will be unmanned and completely automatic in flight, controlled electronically from shipboard or land bases. Its compactness permits its operation from restricted areas aboard small warships and it can be stowed aboard submarines.

Capable of literally hanging in the air as does the bat, it can dart in any direction, hover close to the sea's surface and return to its operational base completely controlled. It can perform a multitude of missions that cannot now be done by existing aircraft or helicopters.

As the newest concept in the growing arsenal of "push button warfare" weapons, it would be particularly useful on extremely hazardous missions. Thus it would reduce the high probability of a serious loss of personnel and matériel.

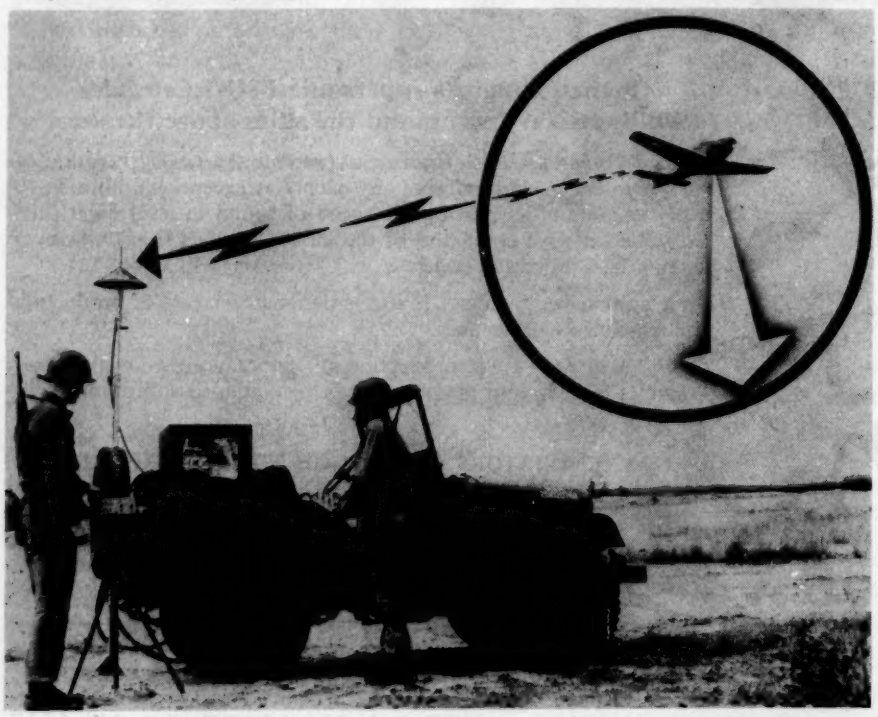
A new high speed rocket, ASP, especially designed for studies of the upper atmosphere has been field tested by the Navy. Atmosphere Sounding Projectile, as the missile is officially known, will be used to gather information, study cosmic ray emanations and other geophysical phenomena.

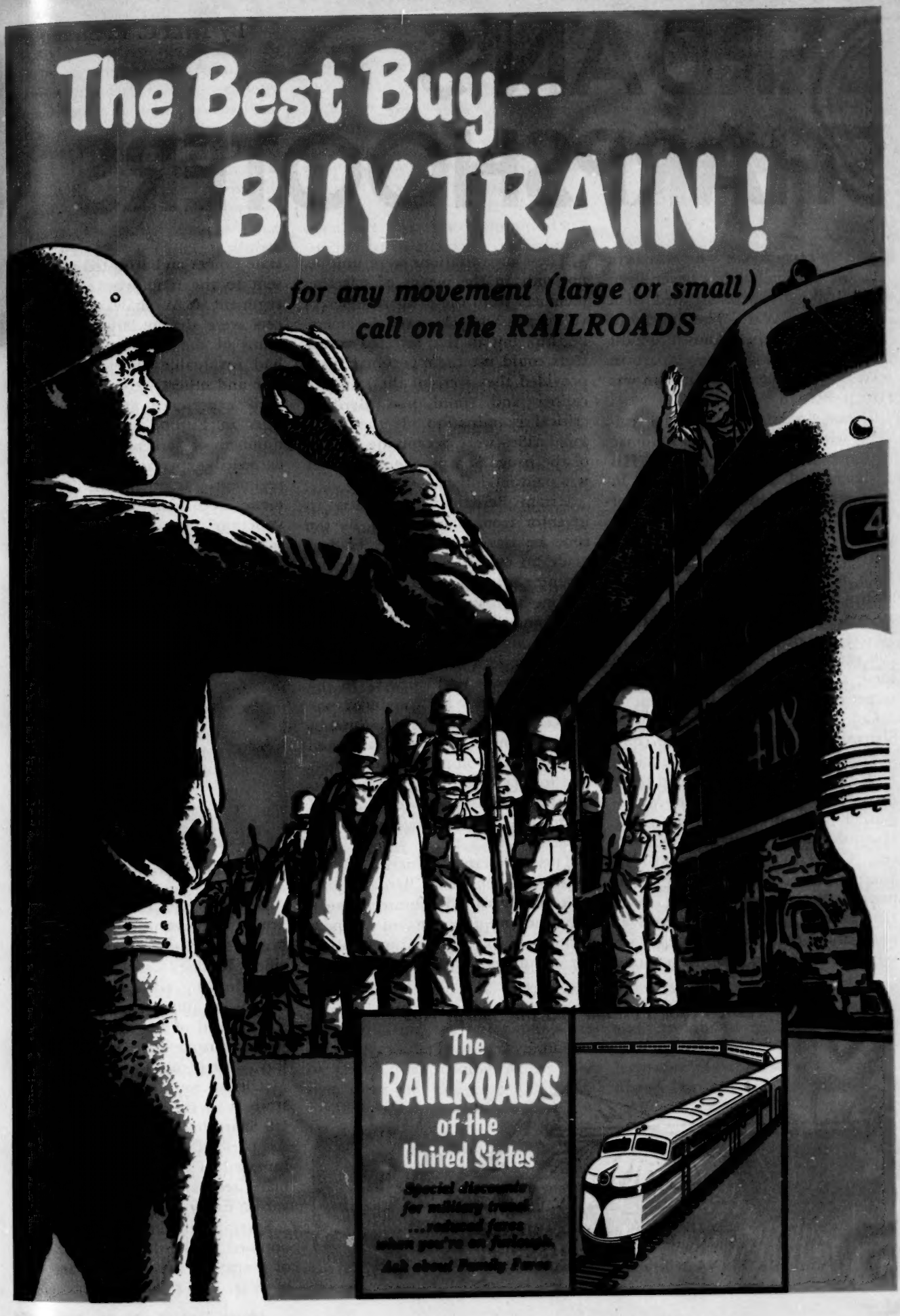
Specifications for the rocket and the transducer to relay the gathered information were prepared by the US Naval Radiological Defense Laboratory, a field activity of the Bureau of Ships in San Francisco, Calif. ASP will be used in studies of the upper atmosphere.

The rocket is small, with a diameter of 6½ inches and length of 12 feet. Launched from simplified portable launching racks and powered by a new solid-propellant rocket motor, it is able to reach speeds of more than 5 times the speed of sound within seconds.

A television pickup system utilizing an aerial drone (left) designed to aid combat commanders in obtaining immediate ground evaluation was announced recently by the Dept of the Army. Live TV shots can be made of vital terrain from the drone and then broadcast to a ground control station. The pilotless system consists of a modified L17 aircraft, an autopilot which provides effective remote control by means of radio signals and a ground control unit that can be carried in a jeep.

Signals transmitted from the ground station to the plane's autopilot regulate stability, altitude and air speed. Special control provisions prevent stalls, overspeeding, excessive loss of altitude and other hazardous conditions. Upon completion of the drone's mission the ground controller flicks an approach switch which automatically positions landing gear, flaps, propeller pitch and power in proper sequence for approach and landing. To date remote control has been tested over a 25 mile area. The operational range of the system will be determined by the range of the radar tracking system.

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BERDAN'S SHARPSHOOTERS

By 1stLt C. H. Strandberg

THE EFFECTIVENESS OF ACCURATE rifle fire in combat has never been more strikingly demonstrated than in the Civil War. The ingenious efforts of one man, unknown to most Marines, played a decisive part in several engagements. That man was Hiram Berdan.

Hiram Berdan commanded a regiment with the Army of the Potomac in more than 60 engagements. His regiment and that of Col H. A. V. Post, also under the nominal lead of Berdan, was composed of elite volunteers. These regiments were officially known as "US Sharpshooters." Each man had to demonstrate his ability with a rifle prior to acceptance as a recruit. He had to shoot 10 consecutive shots into a target at 200 yards. The distance of each of these shots from the center of the target could not exceed 5 inches.

Col Berdan's 1st Regiment, US Sharpshooters, consisted of 10 companies, representing several states. Four companies were recruited from New York, 3 companies from Michigan, 1 company each from New Hampshire, Vermont and Wisconsin. Col Post's 2d Regiment, US Sharpshooters, contained 8 companies: 2 companies from New Hampshire, 2 companies from Vermont and 1 each from Maine, Pennsylvania, Michigan and Minnesota.

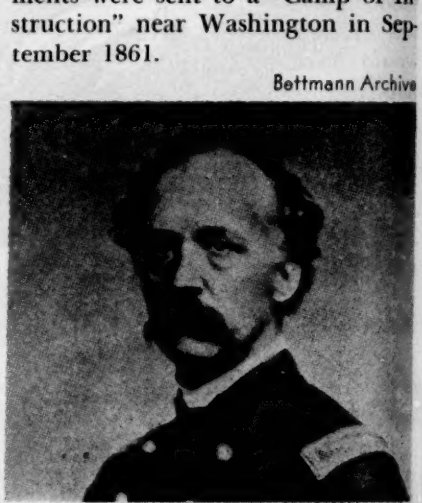
These organizations were unique, not only in the means of selecting members from the great number of volunteers who clamored for membership, but in that selected volunteers could use their personal rifles, provided they were of the standard caliber and could pass Berdan's critical examination. If these personal rifles were acceptable in lieu of the issued Sharps rifle, the owner was paid 60 dollars for them.

Hiram Berdan, himself, was an inventor from Phelps, NY. By the time he was 20 years old, he had made an enviable reputation as an inventor of ingenious devices, including a reaping machine and a "mechanical bakery."

Early in the Civil War, he conceived the idea of a special force to serve as scouts and snipers. In the spring of 1861, he convinced the Secretary of War of the soundness of his reasoning and was commissioned a Colonel of Volunteers and authorized to recruit and train a regiment. Tactical training was to consist of skirmishing, patrolling and rifle practice.

The Adjutants General of the loyal states endorsed Berdan's concept and recruited volunteers meeting the requirement of demonstrated ability. Elimination contests for volunteers were conducted on state ranges and accepted volunteers sent to the rendezvous of the new regiment at Weehawken, NJ. Officers were drawn largely from veterans of the Mexican War. Many had invaluable experience in that war and others were French officers with experience gained from the wars in Europe and Africa. The number of acceptable volunteers exceeded expectations, so a second regiment was organized. The regiments were sent to a "Camp of Instruction" near Washington in September 1861.

Bettmann Archive



Gen Hiram Berdan

Berdan's choice as the principal arm of the US Sharpshooters was the breech loading .52 caliber Sharps rifle. Berdan wanted the lighter, faster-loading rifles for skirmishing and picket duty.

Approval of his request for these weapons came in a rather unusual way. President Lincoln and Gen McClellan were invited to a demonstration of the tactics in which the US Sharpshooters had been trained. As part of that demonstration, a hundred of Berdan's men shot at a man-sized target at a range of 600 yards. Every shot was a hit.

Several influential persons were opposed to Berdan's request. One of them was the Assistant Secretary of War, Mr. Thomas Scott. Appar-

The Texas Prone Position and the Sharps rifle

ently attempting to discredit Col Berdan personally for setting his opinion against the prevailing acceptance of muzzle-loading weapons, he challenged Berdan personally to demonstrate his ability with a rifle. Berdan accepted. A man-sized target labeled "Jeff Davis" was placed 600 yards away. Berdan borrowed his sergeant major's rifle and prepared to shoot. Mr. Scott remarked that officers shouldn't get their uniforms dirty by shooting from a rifle pit and ordered Berdan to shoot standing. As Berdan prepared to comply, Scott asked, "At what point are you going to shoot?" "The head," answered Berdan. "Shoot him in the right eye," Scott ordered.

Berdan later wrote, "I was then taking aim and made no reply, and it is hardly necessary for me to say that at that distance — 600 yards — I did not try for the eye but did shoot to strike the head. The target was brought in, and as good luck would have it, I had cut out the pupil of the right eye. No man knew better than President Lincoln how to turn what he knew to be an accident to good account. He began to laugh, and he kept on laughing until he got into his carriage, and then said, 'Colonel, come down tomorrow and I will give you the order for the breechloaders."

Unfortunately, these rifles did not arrive in time to be used in the first engagements.

In these first engagements, 2 companies in each regiment were armed with muzzle-loading target rifles and the remainder with Colt's 5-shot revolving rifles. These latter rifles were disliked initially because of a tendence to discharge all cylinders simultaneously after heating up. Later, they became highly esteemed, although never to the degree of the Sharps which were issued in early 1862.

Berdan's men had to walk 30 miles on their first foray against the Confederates. They acted as advance guard for Gen Morell's 1st US Division, V US Corps.

The men were eager to fight and outdistanced the column. An officer on Gen Morell's Staff is reputed to have contacted Berdan and asked him whether the US Sharpshooters intended to go on alone, or did they prefer to wait for the Division for support.

Members of both sharpshooter regiments were commended on numerous occasions for their aggressiveness, bravery under fire and obedience to instructions. They specialized in attacking Confederate outposts, ambushing patrols and in sniping. Their specialty was in picking off artillery gun crews.

At Yorktown, leading the advance of the Brigade commanded by Brig Gen Fitz John Porter, they were specially commended for the number of cannons they put out of action during a 10-hour engagement. On one occasion, the muzzle of a cannon was seen protruding from under a covering of tightly packed sand bags. A detail of sharpshooters took the sand bags under fire, causing sand to pour into the barrel. On the 13th shot, the cannon burst.

Gen Porter's commendation to Col Berdan stated in part, "I am glad to learn from the enemy themselves, that they begin to fear your sharpshooters. Your men have caused a number of rebels to bite the dust. I am glad to find that your corps are proving themselves so efficient and trust that this intelligence will encourage your men and give them, if possible, steadier hands and clearer eyes, so that when their trusty rifles are pointed at the foe there will be one less rebel at every discharge."

At Gettysburg, one Confederate commander cited the US Sharpshooters for "turning the tide in favor of the Union cause."

The 1st US Sharpshooters were attached to Gen Sickles' corps near Little Round Top. Their mission was protecting the left flank. One company, under personal command of Col Berdan, supported by 200 men from the 3d Maine Regiment, made a reconnaissance in force toward a wooded area about a mile and a half to their front. They encountered Longstreet's 30,000 men

advancing in 3 columns. Berdan immediately notified Sickles, who relayed the word to Gen Mead. He then took Longstreet's force under rifle fire and delayed them for 40 minutes. The delay was long enough for Mead to readjust his force to protect the round tops, considered to be the critical terrain at Gettysburg.

As a result of this and other notable exploits, Berdan was brevetted a brigadier general after the close of the war.

Berdan had been seriously wounded earlier in the war, and his strenuous efforts in this and other actions caused severe complications. He was hospitalized for 15 months and eventually discharged for disability in January 1864.

The exploits of the US Sharpshooters, in action nearly a hundred years ago, can provide valuable lessons in this day of unit separation and triphibious mobility. Sniping and the effects of accurate rifle fire have proven themselves through history to have more than mere "nuisance value." They are critical, and can be nurtured only through training, practice and organization.

US MC

An elite corps, they demonstrated a lesson still valid today —

the expert rifleman critically influences the infantry battle

LOW and SLOW

Wanted: sober mature teamsters to work with a growing, multipurpose stable

By 1stLt J. M. Perry

HARDLY A DAY PASSES THAT SOME Marine somewhere doesn't remark, "If it hadn't been for that helicopter getting me off, I'd still be on that hill," or a tactical commander who doesn't find time to praise the helicopter's "battle eyes." The praise that this ugly duckling draws from battlefield admirers goes on and on. Why then, if the appearance of this vibrating monster generates such admiration, do some naval aviators shy away from duty involving flying it? The obvious answer is the feeling of disgust that our young pilots have for anything which lumbers along "low and slow."

Maybe they're right in harboring disdain for such an ungainly aircraft. It certainly doesn't have the beauty of a sleek fighter plane. Certainly a good simile would be one of comparing it to a work horse. Like prima donna jockeys who wouldn't think of riding a dray horse in a race, our jet pilots look down from their saddles over long noses and "har-r-r-umph!" But from one source or another, the Marine Corps must find pilots for helicopter duty. Eventually, every naval aviator flys everything the Corps puts in the air. Marine Corps aviators have always existed to support the Queen of Battle. An aircraft is not accepted unless its performance is geared to this reality. If the pilots and the aircraft have this mutual understanding, and the infantry finds both reliable, no mission is too small or task too great.

A solution to the procurement of a sufficient number of helicopter pilots could very well lie in the ranks of officers who are physically, mentally, and psychologically adapted to flying but who find themselves "just a little too old." There are myriad requests for aeronautical training disapproved each year because the officer concerned was past the terminal age of 26.

Admitted, these men may be too old for 600-mile-an-hour jets, or age has slowed down their reflexes for fast-moving air transports, but they are thoroughly capable of undertaking helicopter training. A corps of these pilots could be created with the understanding that they would be limited to duty involving flight of helicopters only, or helicopters and light fixed-winged aircraft only.

Personal experience has revealed to this writer that basic proficiency in the helicopter can be obtained in a reasonably short period of flight instruction, barring, of course, any deficiency on the student's part to react favorably to flying.

The creation of such helicopter pilots would relieve the younger men of this evidently disturbing job and release them for duty in their world of speed. It would also provide a hard core of battle-tested ground officers who both know and appreciate the abilities of this little whirling dervish.

Naval aviators may immediately protest this invasion of their citadel as being impractical for a number of reasons. Possibly, they will reflect on the many numbers of hours that a pilot must spend in ground school learning navigation, theory, instruments, survival and the basic rudiments of all things mechanic. But much of this ground school can be eliminated, since the subjects taught can obviously be reduced and geared to a lower and slower method of flying.

The arguments, pro and con, all point in the direction of a breed apart. What will we do with a group of men exclusively dedicated to helicopter work?

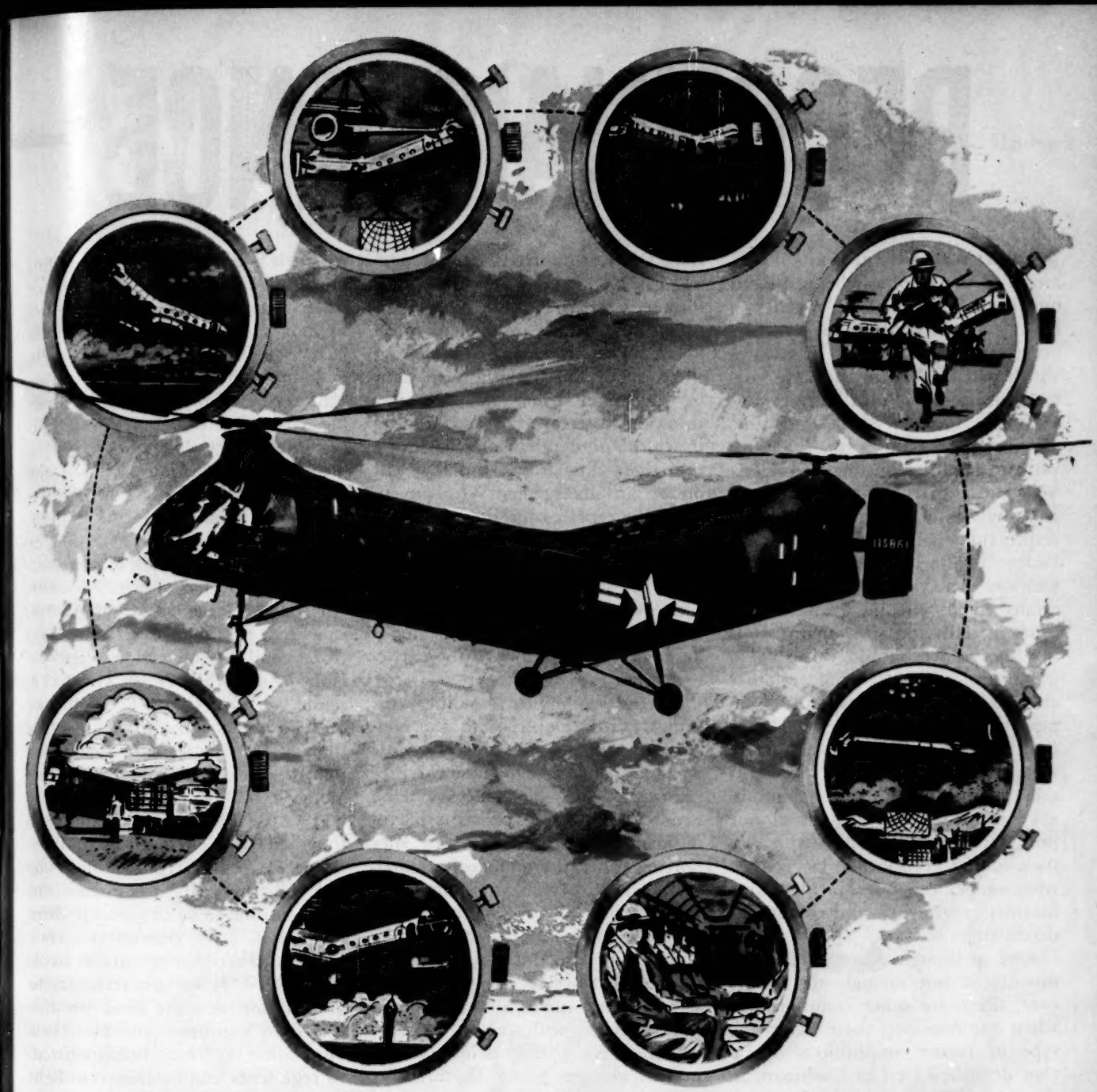
As was previously mentioned, the applications would come from ground officers with the desire to fly —infantrymen, tankers, artillerymen or engineers. Hardly a tactical command exists that does not have a need for the helicopter at one time or another. If these units had their own organic pilots who flew these work-horse missions when needed, the knot would be more tightly drawn, and the pilots themselves could maintain ground proficiency when not flying. A good tank officer, flying an observation mission for his battalion, is better equipped professionally to know what his commander wants or is looking for. Only a "ground pounder" can deeply understand how quickly the life runs out of a wounded man marooned on a high hill.

An age limitation of 30, upon entering training, would still give a dedicated man 15 years of flying. Within certain limitations, applicants would not need to possess the fine edge of physical fitness required of our jet pilots.

Just as they would be a breed apart, so would they be an integrated part of our light air arm. Rotary-winged pilots possess the same co-ordinating reflexes of their fixed-winged counterparts. They could be qualified in light fixed-winged aircraft without difficulty to help supplement the need for this type of pilot when necessary. Their potential is limitless. Unrestricted, they would be useless, since any light plane pilot quakes at the thought of flying a fast and powerful ship, while every heavy plane pilot shudders as he watches these little leaves in the wind battle gusts of air that he normally barrels through with ease.

Right or wrong, the battle is on. I've heard too many naval aviators grousing about flying helicopters. Ground officers are itching to leap into the blue. Conformists are scratching their heads over a problem that could grow to considerable proportions before the fight is over.

One solution, maybe — but still it's *a* solution: train them now for tomorrow's "Korea." And Headquarters take note—here's your first applicant. USMC



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RECONNAISSANCE

EVERY NEWSPAPER READER IS aware of the emphasis being placed on the development of missiles — both by our government and by other countries. We read of missiles which will be used in surface-to-surface, surface-to-air, air-to-surface and air-to-air roles. We are told they vary in ranges from a few thousand yards to the intercontinental variety. They will carry warheads of an amazingly large variety of yields. A respectable part of our national budget is allocated to this type of weapon. And, it is hinted, in operations some will be available for units of battalion size on up. It is this fact which should cause us to pause and consider quite seriously changes that must be made to accommodate these missiles. We know they will be available soon, but are we prepared to employ them? If these missiles are to be used profitably, certainly one element of our preparation must consist of the ability to detect appropriate targets. At what ranges can our Marine Corps infantry regiments and battalions detect them today?

And, as though this adaptation to missiles is not enough to ponder over, there are other complications when one considers their use in the type of future amphibious operation described by Col Cushman, in the April 1955 issue of the GAZETTE. He points out that an up-to-date enemy force will have developed more powerful weapons, somewhat comparable to ours, and we can surmise that among other considerations those of passive defense, alone, will cause our Marine division/wing forces to separate units more than in the past. Col Cushman gives an idea of what he means by widening the scope of our thinking in relation to objectives when he advocates thinking in terms of areas 200 miles in width and depth. Many may question these dimensions, but few will doubt an enlargement of conventional-concept objective areas is mandatory. The subordinate regiments and battalions are going to be more self-sufficient, more independent, more mobile, more flexible, more powerful and much more alone on their portions of the battlefield than ever before.

These developments point with unmistakable emphasis to the conclusion that we need to readjust what are now rather standard procedures. A host of changes will be needed: changes in concepts of intelligence, tactical maneuvers, supporting operations, logistics, communications, organization and others. We are now giving thought to progress in many of these fields. However, it is with changes in intelligence that we now concern ourselves. What novel ideas are being experimented with in the field of intelligence. The question is: are needed changes being obscured by present procedures? For example, the almost universal use of "canned" intelligence messages formulated by our umpires and maneuver directors make data collection seem too easy. We have secured no data ourselves; it is given to us. Are we thus unconsciously taking intelligence matters too much for granted? Let us look more closely into this subject.

As presently constituted, a Marine infantry battalion or regiment is not blessed with a potential for acquiring intelligence that looks as deeply into the enemy lines as even the shorter-ranged of our new missiles give promise of penetrating. Indeed, it seems as though a battalion or regimental commander is rarely accurately informed of what is occurring on the "enemy" side much further than that which can be learned from good eyesight and a few patrols. And whether at Camp Lejeune, Vieques, Camp Pendleton, or on Iwo Jima, this range is rather short when compared to that promised by missiles that are coming along.

If we use foot patrols, how often do they penetrate enemy lines and cover the entire front (plus intervals on our right and left) then render reports in time to be of value? Indeed, how often have ground reconnaissance units avoided capture in recent maneuvers? If we use aerial photographs, how new are these when received by regiments and battalions? How often do fresh photographs get to regiments and battalions after D-day? How adequate is our Marine infantry regimental and battalion staff to evaluate them? Would the present system likely yield results which would permit missile attacks on targets of opportunity? Similar questions can be asked of air observer reports.

When we give honest answers to these questions, we find there is need for serious thought and experiments in intelligence activities. And since these questions have been posed, what are some of the ways in which we may be seeking answers?

First, let us consider the ground. It has long been an established principle that each commander of a combat unit is responsible for that unit's security. In practice, a battalion or

BrigGen L. C. Hudson has had a varied career since leaving the Naval Academy in 1931. During the 30s his duty stations included Quantico, Guam, Washington, Parris Island and at sea, aboard the USS Quincy. During WW II he was with the 4th Mar Div as CO 2d Bn, 25th Marines. He holds the Legion of Merit for Saipan and Tinian, and the Navy Cross and Purple Heart which he received for Iwo. He was assigned to the Command and General Staff College at Ft Leavenworth, 1947. In July 1949, he was appointed president of the UN Mixed Armistice Commission for the State Dept in the Middle East. After attending the National War College he served as assistant with the JCS and the NSC. President of the Tactics and Techniques Board since 1953, he was named Director of MCDC in 1955. The General now commands Landing Force Training Unit, Atlantic.

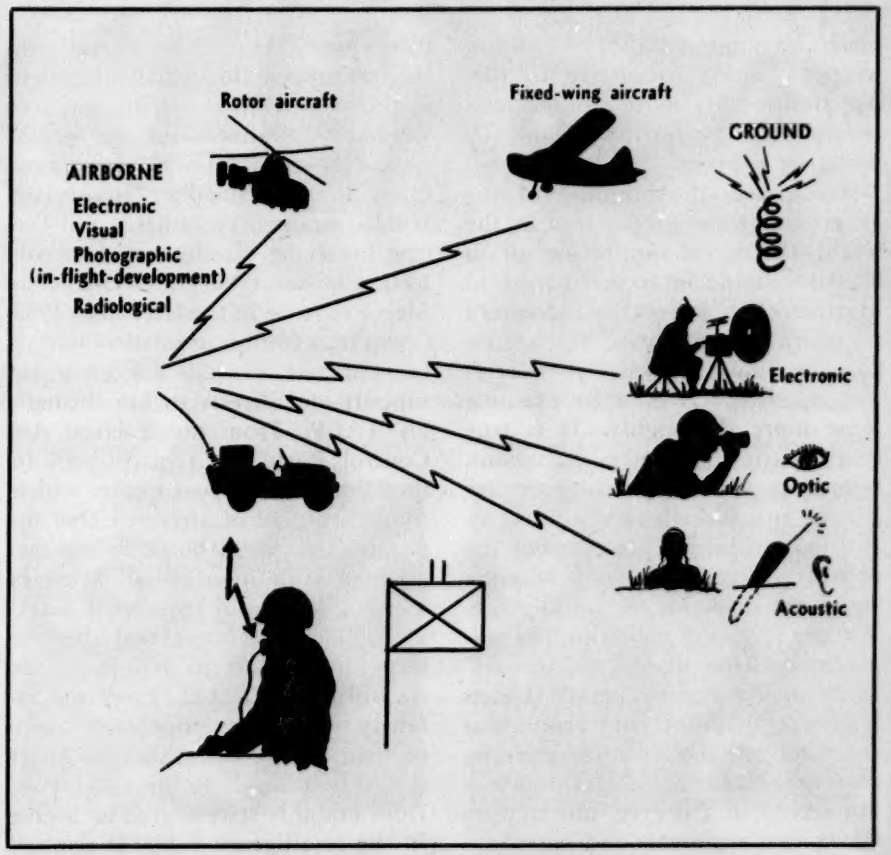
Key to the Concept

By BrigGen L. C. Hudson

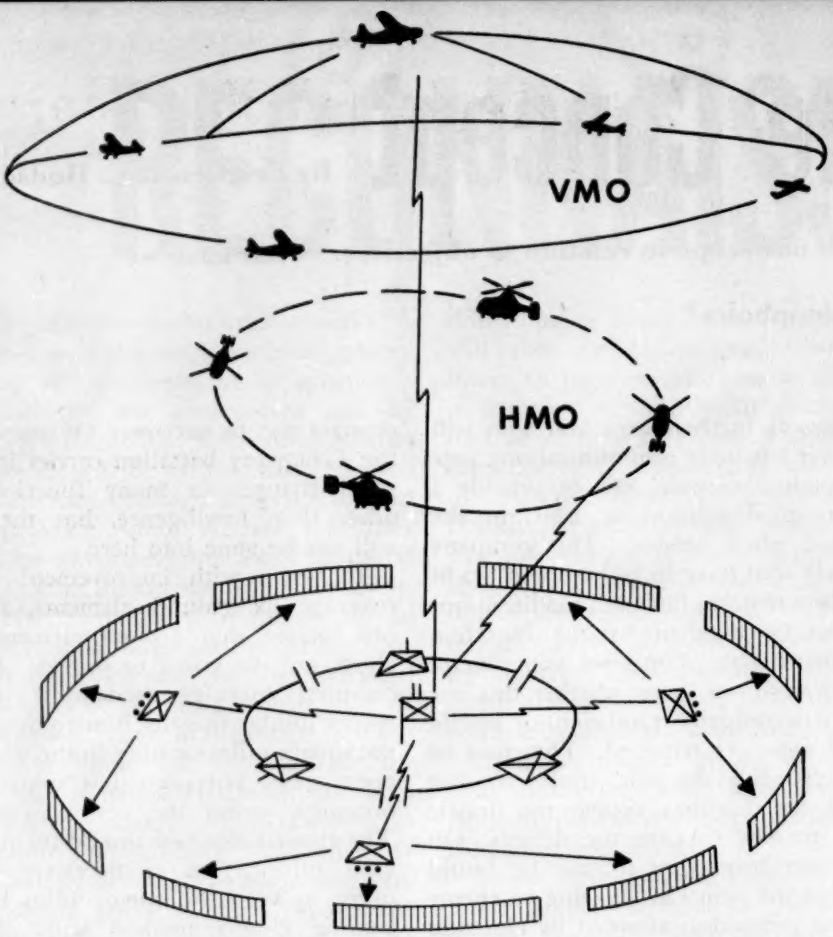
We have widened our scope in relation to objectives. What have we done to close intelligence loopholes?

lower level commander usually establishes a local security system (using patrols or other means) that should give warning of enemy attack prior to the time the enemy can surprise the main body of troops. In a moving situation, this security system is rarely more than good rifle shooting distance from the troops for whom they are providing security. The patrols cover dead spaces and probe further to the front and flanks. Now let us recall the separation distances proposed by Col Cushman and then remember that even in the assault there is no longer a friendly elbow practically touching us on the right and left. The linear concept has gone. For many units there is only space on the flanks. What must be changed? Clearly, additional farther-ranging security forces will be needed to cover the greater area required. But if we attempt to provide such forces in the conventional manner, these patrols and scouts eat deeply into the manpower of tactical units of the company or companies providing them; perhaps, in some circumstances to such an extent that the tactical integrity or structure for fighting is seriously impaired. Thus our solution must take into account the serious problem which presents itself — of getting personnel to do the needed job and yet avoiding the harmful effect caused by disruption of our tactical units. Under a personnel ceiling, there seems one solution worth trying—experiment with the use of 4 smaller rifle companies per Marine infantry battalion. By using one company on the intelligence and security missions we shall provide the forces needed for our more extensive and more distant intelligence and security requirements without constant depletion of the remaining fighting units. In addition, this security force will be under a tactical commander who will be present in their area and who will have adequate communications, supporting weapons, etc. to provide a powerful reinforcing unit on the spot when needed. This company may well have to be "tailored" to fit the situation, but such modifications can be handled by the battalion commander. Until we experiment, we shall not know whether this one extra company is sufficient or whether more are required. That may be determined by field trials. At first glance this may appear too drastic a remedy to cure the defects. On closer inspection it may be found that the defect of allowing an enemy the protection afforded by closeness to our own troops imposes such a dangerous situation that drastic changes may be necessary. Of course, the 4-company battalion carries implied changes in many functions other than intelligence, but these will not be gone into here.

Yet, even with improvement in coverage by ground elements, we can foresee that ground elements, alone, are not going to provide the complete coverage needed. If the reader doubts this, let him compute the square miles existing in the wide open areas, purposely left sparsely occupied, under the new concept. The ground elements should furnish vital information so necessary in order to keep the enemy from becoming closely meshed with our forces before we are alerted, but they are by no means adequate to



Battlefield Surveillance—will all the gathering agencies and equipment be available to the rifle battalion commander?



Battalions of 4 companies may offer more flexibility on the ground, but a closer team-up of air-ground intelligence is required

reach the range of missiles and other weapons which we desire to use. Apparently this more distant area coverage can be facilitated only by using air support.

As perhaps the foremost of the air-ground team proponents in the world, the use of supporting air in all roles should be second nature to Marines. Yet, in seeking the extent to which air can help, a few new considerations present themselves and we may do well to examine these more thoroughly. It is true that Marine infantry battalions, regiments and supporting air are teamed up through tactical air control parties, etc. at present; but the existing structure may not meet the increased demands of intelligence. We can profit by reviewing past experiences. How many "minutes-old" aerial photos or air observer reports have our battalion and regimental commanders received in training exercises? Marine divisions/wings are served to a degree, but inquiry shows that regiments and battalions are lagging to a serious extent in their receipt of intelligence from this source. One may expand on this point and show that, although in theory and frequently in practice, we have an almost immediate response to an infantry battalion's request for air support involving bombs, strafing, etc, such is not the case involving intelligence data collection missions. As stated in LtGen Megee's article in the December 1955 GAZETTE, a front line infantry battalion commander calls for close air support and directs strikes through his TACP. From the Tactical Air Control Party the request goes to the Direct Air Support Center which controls a pool of aircraft either on ground alert or airborne in the target area while intermediate agencies monitor (to cancel requests if necessary). The direction center then directs the aircraft to report to the control of the TACP. From the infantry battalion standpoint this procedure for securing air support would be difficult to improve upon. Does not this system give us a clue in the intelligence field? It appears to point the way to air-ground support at lower levels. Thus, in intelligence activities as well as in munition delivery, there should be closer, direct air support to regiments and battalions (subject to monitoring by higher echelon). There should be under test a system to provide air observer reports and freshly taken aerial photographs direct to the subordinate elements of the Marine division. Experiments in decentralization of this type of air support may well lead to providing the "eyes" so sorely needed. For longer ranges, a system along these lines might prove the most suitable for giving regiments and battalions the means to employ missiles and operate more efficiently under the new concept.

Teaming up ground and air in intelligence is not entirely a new subject. Previous articles in the GAZETTE have touched on such matters as the successful use of aerial photography taken by our VMO craft in Korea and elsewhere and with proposals for quick development of photographs and delivery to front line elements. Our use of aerial observers and of radio, drop and pick-up messages is certainly not new — we did this in Nicaragua. Nor is our use of helicopters to transport patrols to distant points new. Yet the gathering together of all of these strands has not been practiced. Further experimentation in these activities seems called for.

Finally, it may be observed that division/wing maneuvers are not the only places where such experiments can be conducted. Opposing an infantry regiment or battalion plus VMO support to a component of the parent organization may serve the training purpose equally well. (For example, a Marine infantry regiment or battalion plus VMO detachment versus rifle company.) Intelligence training exercises in which these units initiate operations miles apart, then close to contact, may go far toward providing us with a needed proficiency. With ground and air working at intelligence acquisition, quick processing and dissemination, we shall be prepared to use missiles and other means envisaged in the new concept to stop or cripple the enemy long before he closes with us. Without experience and progress in this field we may awaken to its battle need too late.

US MC

Cessna's armored OE-2 protects Marine pilots

Cessna's reconnaissance-liaison plane—the OE-2—brings greater versatility to Marine Corps air operations, is specifically designed to give the pilot protection in combat.

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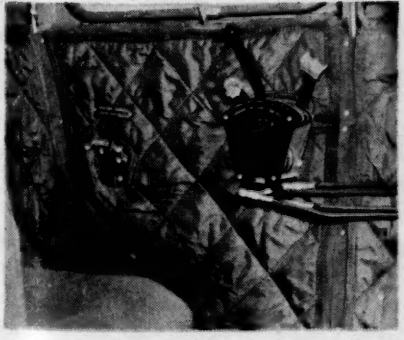
A more powerful version of Cessna's famed L-19, the OE-2 is the first liaison airplane with built-in target-marking capabilities. It also is used as an artillery spotter, to lay communications wire and to drop supplies to troop positions.

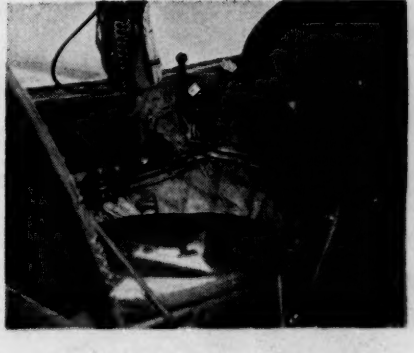
The versatile OE-2 meets a specific need, is another example of Cessna's cooperation with the military in planning for today's air age. CESSNA AIRCRAFT CO., WICHITA, KAN.

Cessna

Thick, nylon flak curtain and armor plate in rear compartment protect observer.



Flak curtain and armor plate afford pilot maximum protection.



Three-quarter inch armor plate fits under pilot and observer seats.

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A REALISTIC REQUALIFICATION COURSE

By 1stLt M. E. White

Demanding in every sense of the word, it produces combat ready marksmen able to cover ground rapidly and deliver accurate fire

. IN AN EFFORT TO ADD REALISM TO field problems and large scale maneuvers, the Marine Corps has adopted and trained aggressor forces, liberalized the use of blank ammunition and adaptors, and even employed simulated atomic bombs which produce the well known mushroom cloud effect. Much headway is being made in the FMF by training unseasoned and post-Korean personnel in the realities of what can, and what will be expected in a shooting war.

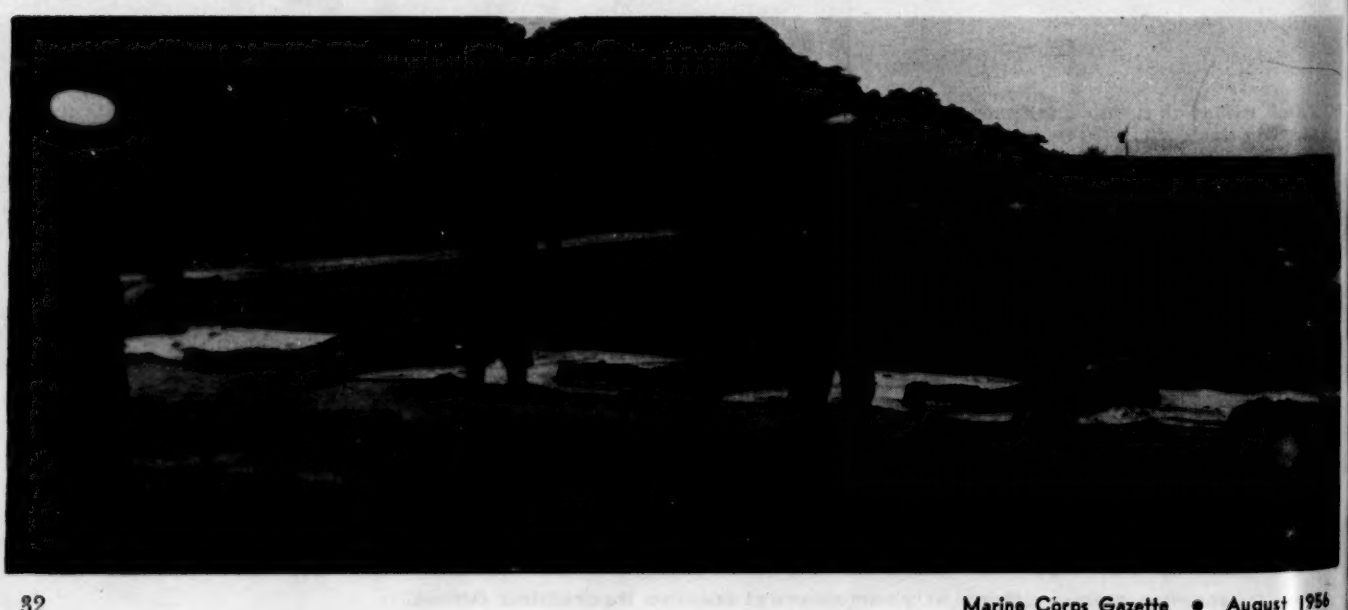
However, as long as we continue to fulfill our assigned missions, there will always be numerous personnel in barracks detachments, headquarters, reserve and other non-FMF organizations who are just not in a position where realism can be projected into the training picture.

One solution lies in Part G, Chap 24, of the Marine Corps Manual, and in Marine Corps General Order 151. Here lies the authority and directive for annual qualification with small arms for the purpose of maintaining a high order of excellence in the field of marksmanship. During the spring, summer and autumn months (and for those who feel they cannot be spared, the winter months), the large majority of us in non-FMF organizations lay aside our guard duties, clerical duties, or supply and other essential (but definitely non-tactical) duties, and spend 2 weeks at the rifle range. Obviously, we cannot make "combat infantrymen" in 2 weeks, but we can toughen up and produce to a higher degree of combat readiness all personnel who are required by regulations to fire the basic weapons each year.

For example, the British Royal Marines, the organization that is sometimes considered the father of our Corps, using a rifle range identical to ours, accomplish a multipurpose objective in approximately the same period of time. They develop high caliber shooters, improve physical conditioning to the extent of making any squad leader proud of his men and enhance competitive spirit — yet, all the while stimulating teamwork.

The formula? First of all physical drill, including obstacle courses (or if not available, just plain double-timing over ever-increasing distances) is a must during a specified period each day at the rifle range. And yes, even the staff noncommissioned officers must take part, because if they don't it will be practicalliy impossible for them to be in condition to

Marines of the USS* Toledo *compete with Royal Marines of HMS* Newfoundland *near Hong Kong



lead their men once the shooting starts. Next, continue the emphasis on correct sighting, breathing, trigger pull and snapping in with slow fire as is presently done, in order to establish correct sight information and positions. Then, in lieu of the rapid firing, adapt an exercise similar to the following:

Instead of the rapid fire at the 200-yard line as we now know it, use silhouette targets the shape and size of a man standing, and painted a dark color. Shooters then line up in the prone position, lock and load, inserting one clip of ammunition on the 300-yard line. When the silhouette targets come up, shooters move out at double time to the 200-yard line, hit the deck next to their assigned number stake, and fire one shot from the prone position. A time limit of 30 seconds is allowed to accomplish all this. At the end of the 30 seconds the targets face away for 3 seconds, again face the shooters for 5 seconds, then face away for 3 — continuing this procedure until the target has faced the shooter a total of 8 times, allowing the shooters the opportunity to fire one complete clip.

This rapid fire exercise is then followed by the regular slow fire only at the 300-yard line, and slow fire at the 500-yard line.

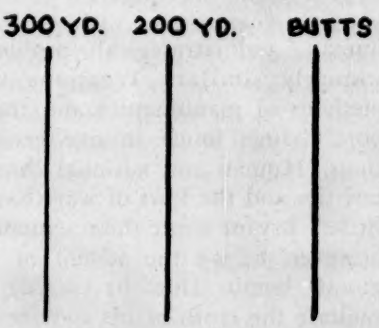
The grand finale, and a true test of rapid fire ability should be as follows: One hundred yards behind the 500-yard line (or a shorter distance if space is not available) shooters would line up, adjust sights and slings, and lock and load with 2 rounds. Upon command, all hands would assume the prone position and watch for their targets. When their silhouette targets appear, shooters would rise, and move out on the double to the 500-yard line, hit the deck and deliver 2 rounds from the prone position onto their target, all in a total time of 30 seconds or less, depending on the distance traveled. A 10-second period would then be allowed at the 500-yard line (during which time the targets would be faced away) to load weapons and adjust sights. Then, again upon the appearance of their targets, shooters move out to the 400-yard line and repeat the 500-yard line procedure. (Again having only 30 seconds to cover the distance

Silhouette type target used

and fire the 2 rounds). Next would be a run to the 300-yard line (after the same 10-second "break") and again fire 2 rounds, but this time in either the sitting or kneeling position, in the same period of time (30 seconds). Repeat exactly the same procedure, ending up at the 200-yard line; then finally to the 100-yard line, and deliver the last 2 rounds from the offhand position.

Naturally the Range NCO would have to follow the shooters, and safety and scoring methods would have to be modified to meet the situation. Each hit, anywhere on the silhouette target would count so many points.

During any preliminary rapid firing practice, members from different units could compete against other units, one unit using the even numbered targets and the other unit the odd numbered targets. Very few changes, if any, would have to be made to any existing ranges. However, the areas between



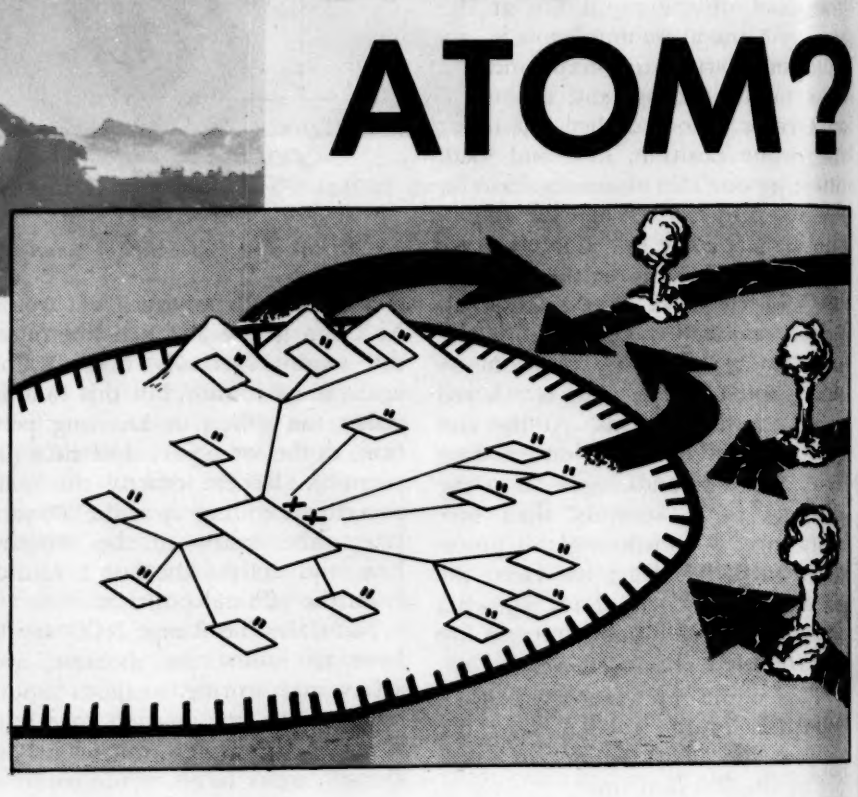
Designed primarily for personnel serving with non-FMF units, this course provides a true test of a man's marksmanship and gives him two weeks of good physical conditioning. Starting from a prone position at the 300-yard line shooters move out at double time to the 200-yard line. All firing is within specified time limits.

the different firing lines on some ranges would have to be altered. But the more surmountable obstacles in the way, the better.

Impossible? Impracticable? Too hard to adopt? Let me cite the following example in which I participated during the month of February 1956. Personnel of the Marine Detachment, USS *Toledo,* while the ship was paying a good will visit to Hong Kong, BCC, competed with the Royal Marines from HMS *Newfoundland,* a light cruiser with a 60-man detachment. A rifle match was held at the Royal Marine Rifle Range located near Hong Kong. The Royal Marine course, very similar to the one explained in this article, was fired by personnel of both units. The US Marines came out on top by a narrow margin. They all felt, however, that the course was a lot more realistic and demanding than any course "A" they had ever fired. The *Toledo* Marines had not fired for qualification since July of 1955, but by recording and remembering the sight adjustments of their weapons, and the fact their M1s were pitted against Enfields, they were able to give an excellent account of themselves. The Royal Marines had only completed 2 days of preliminary marksmanship practice. I'm afraid the final outcome would have been different had they had another day or two of training, especially in the rapid firing phases.

So let's give our marksmanship training some serous thought. Let's not restrict realism to the FMF, but give it to all hands. If you've never run 100 yards and then attempted to fire and hit a silhouette-size target a few hundred yards away, you've got a new experience in store. Also, you will probably realize you're not in as good condition as you think. But by the time you finish up your rapid fire with a high score at the 100-yard line on record day — after starting out at the 600-yard line — you will really be an expert in every sense of the word: an expert in adjusting sights and slings, and getting into and holding a good position. Most of all, an expert in covering ground, delivering aimed, accurate fire, and developing your ability to think ahead; a prerequisite for every combat-ready Marine. USMC

HAVE TACTICS BEEN INVADED BY THE ATOM?



Tactical concepts inherent to the art of war are fluid but the unchanging character of the individual soldier provides the basis of military strength

By LtCol J. M. Strawson, Queen's Own Hussars

BATTLES ARE WON BY MEN. THEY are not won by machines, nor by weapons, nor by the elements, but by men. War changes but men do not. War changes in its methods rather than its principles, in its weapons and tactics rather than its strategy and its aims. But one thing does not change. It is always men who create the causes of war and the weapons of war, and it is they who wage it and win it. Sir Arthur Bryant, talking of the Revolutionary War, says ". . . the mechanical and tactical devices of war were utterly different from those of today the human and strategical problems strangely similar. Weapons and methods of manufacture and transport change much in five generations. Human and national characteristics and the laws of war change little." Bryant wrote these sentences, however, before the advent of the atomic bomb. Does its coming repudiate the truth of his statements? I think not. For if it is true that Commonwealth strategy revolves still around command of the air, command of the seas, containing enemy forces on land and the defense of the United Kingdom, then atomic weapons do not change the strategic problems, but aggravate them, particularly the first and the last. Whilst it is necessary to have a clear understanding of the strategic background, it is not primarily with such problems that this article is concerned but with tactical ones. For although atomic weapons may have first place in strategic employment, they clearly have tactical uses too, and it is their effect on tactical doctrine (whether it be defense against them or the offensive use of them in the defensive phase) which must be examined. It is therefore

necessary to define the tactical level at which the consequence of these weapons is to be discussed, from, of course, the military (not the naval or air) point of view. Strategy can be defined as the management of armies in a campaign, but tactics is rather the art of disposing military forces *in actual contact with the enemy*. So that the level at which the most profitable reasoning is likely to be advanced is the division, in particular the armored division, for here is a formation which combines a considerable variety of arms with a great diversity of roles.

The aim of this article is threefold. First, to determine what effect the possession of atomic weapons by both ourselves and an enemy has on the tactical handling of the armored division. And here let us be clear about two things. Atomic weapons alone will not win battles. There is also the point that the power of nuclear fission is no longer the secret of one armed camp to the exclusion of the other. The second thing is that conventional and determined handling of ground forces are as important as ever. Thus, it is not sufficient to examine merely the effect on tactics of these weapons, but also their effect on the individual soldier and therefore on training. The third aim is to examine atomic weapons in relation to the principles of war and thus their relation to tactics in broader terms.

The Threat and the Counter

Weapons with atomic warheads carried in a guided missile or a near-sonic jet bomber make frontiers meaningless. But in the land battle, frontiers may still have a meaning and, if so, perhaps England's frontiers are still on the Rhine. In any event, the defense of a river like the Rhine will serve as a tactical setting with which to illustrate the threat of atomic weapons. The shortage of land forces has forced upon the NATO planners the conception of defense on a wide front as far as the opening phase of a war in Europe is concerned. Whether it be based on a river line or divisional bastions occupying important ground does not matter. What does matter is that defense must be organized in depth, accepting that some penetration is inevitable and then subjecting the attackers to continuous opposition until slowed down and finally halted. But defense does not win wars. The aim of defense will always be to kill as many of the enemy as possible before resuming the offensive. What then, within this tactical framework, is the atomic threat?

The first threat is the one from the air. Enemy air superiority must be assumed, so that the enemy will be free to drop an atomic bomb where he chooses. Now comes the question of targets. A conventional atomic bomb can neutralize troops and equipment in an area of 4 square miles provided they are sufficiently in the open and above ground to insure that the effects of the explosion are severe. But what size of troop concentration will justify the use of so valuable a weapon which is almost certainly in short supply? An armored brigade might constitute such a target or a large gun area or a divisional headquarters. It is, however, by no means certain that such a target will exist in the armored divisional area, when the division is operating *in the particular role of defending a wide front*. The forward troops will probably be too close to the enemy's own forward troops; there will be a considerable degree of dispersion between the defended localities, whose infantry will in any case be deeply dug in. The armor is likely to be broken up into small battle groups of squadron size. The gun areas will be well dispersed with numerous alternative positions. What reserves there are will not consist of more than a regiment and will be dispersed; the administrative units are likely to be spread over a large area and will carry out replenishment only during the hours of darkness.

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It is true that divisional headquarters will be fairly concentrated, but will, if time and other circumstances permit, be in deep shelters. Everything will be concealed with the utmost vigilance to counter the conventional air threat and to conform to the normal requirements of deception and secrecy. The skillful use of dummy positions will add to the difficulty of target identification. The division as a whole may be deployed over an area as great as 100 square miles, and in that area there is unlikely to be a target of sufficient importance to justify the enemy's use of an atomic missile against it. And even if there were, there are still the problems of finding it and then pin-pointing it and finally hitting it.

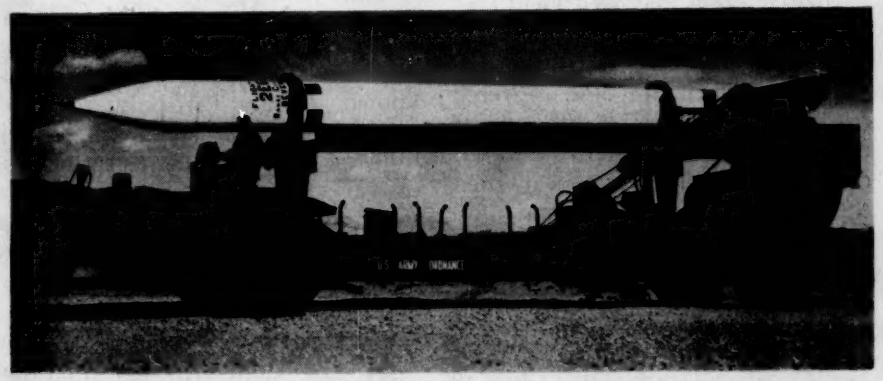
There may come a time, however, when it is tactically necessary to reconcentrate the division, or a part of it, to undertake a counterattack task. And at once it is clear that here is the dangerous moment. For by doing this, you may create the very target which the enemy is seeking. In a similar way the armored division which is held in reserve for the counter penetration or counterattack role may be vulnerable to atomic assault from the air. The problems here will be how to balance control and dispersion, and how to achieve concentration rapidly from a secure measure of dispersion. The solution will lie in rigid observance of the rule that there must be no concentration unless it is essential, in the perfection of digging, concealment and deception, and in the study and practice of night movement and night fighting. Night, however, offers no protection from the guided missile with an atomic warhead, nor from the atomic gun, and it must be assumed in tactical thinking that the enemy is as advanced as we are in this field. Here is the second threat — the one from the ground. It is not materially different from the air threat except that the *active* defense against it is even more difficult. The passive defense measures are similar to those already explained with the subtraction of night as a means of defense in itself. One of these measures, dispersion, can be easily spoken of, but cannot be lightly executed. It has been forced upon us by lack of troops and although it may suit the means to counter an atomic threat, it is not in itself desirable. For the tactical need for concentration is a real one and must not be arbitrarily dismissed. Dismiss it, and the enemy's ground forces may be able to win the battle without resort to atomic weapons. So, then, the timing and methods and duration of such concentration become matters of first importance. In this connection there is also the question of *our* offensive use of atomic weapons during the defense battle. A prerequisite of their use is to compel the enemy to concentrate sufficiently to offer a suitable target. And this will not be done without a defensive structure strong enough to resist the assault of mobile armored forces in open formation.

An armored division does not win its battles by being concealed and dispersed and dug in. It wins them by shooting and by moving. And there is no reason to believe that the threat of atomic weapons will alter the basic methods of handling the three major fighting parts of the armored division — armor, infantry and artillery. Armored units will still employ aggressive fire and movement together with the maximum possible degree of concentration. There is, of course, the bonus of the stabilizer, which, if stationary shooting is to be avoided, will enable its handlers to shoot while moving. But this is not a requirement peculiar to the atomic threat. In general, nuclear weapons will make the tank more and not less important, for the best antitank weapon is still the tank and it also provides protection from radioactivity. Infantry units will still need to assault and defend areas by conventional means, with always the aim of killing the enemy. The guns of the artillery will still be required to provide normal fire support. But *nuclear* artillery will not be a supporting arm like conventional artillery. Instead armor and infantry are likely to be the supporting and exploiting arms for nuclear attack. What again may also differ are the time and speed of concentration for an operation, the measure of digging both before and after, and the desperate need for concealment and security. Above all the need for night fighting will be felt. It is well known that infantry and artillery can fight at night. What is not so generally accepted is that tanks can too. They can and must. They do, of course, need special training and certain aids. Practice in navigation, control and shooting are essential. Artificial illumination, route marking, simplicity of plan and reliable communications will also be needed. In addition, infantry and tanks must develop a high standard of co-operation which will make possible rapid deployment for battle and smooth partnership in the battle itself. The use of tanks at night in the El Duda and Bardia battles, to say nothing of later operations in Tunisia and Normandy, has proved the point. Infantry and armor must be organized and integrated so that they give the maximum possible flexibility and can quickly be grouped in whatever proportion is required. The whole question of organization will be affected by atomic weapons, and constant trials in maneuvers must determine which organization is best. The artillery may have a particular problem if it is to produce and go on producing the concentrated fire which will be needed, for the gun areas will not long go unnoticed. With the self propelled guns of the armored division, it may be possible to devise a well-concealed gun pit *underground* from which the gun moves forward along ramps to the surface in order to fire, and to which it can return if necessary.

It is now possible to say that the posession of atomic weapons by an enemy does not have far-reaching effects on the tactical handling of the armored division *in the defensive role.* It is true that digging must be deeper and concealment must be perfected, but the need for these has already been made clear in countering conventional attack in Korea. Similarly, the requirement for night operations and more extensive deception measures cannot be regarded as peculiar to the atomic threat. Perhaps the problem most worthy of study is that of the conflicting demands of concentration and dispersion. The key to its solution will lie in skillful timing. It is this problem which is also most relevant in the consideration of the tactical requirements for the offensive use of

atomic weapons in the defensive phase. As to the other phases of war, withdrawal — always the most difficult — will bring the particular problem of protecting bridges, which may be sufficiently important to justify enemy atomic attack. But in general the withdrawal phase, when the division is employed in the *couverture* battle, will not offer sufficient concentrations to either side. The armored division is primarily designed for offensive operations. Assumption of the offensive presupposes air superiority which may largely do away with the enemy bomber threat, but does not counter the guided missile or atomic shell. There is little danger of such weapons being used against an armored division operating in open formation in the encounter battle, but if concentrated for a deliberate attack, then the danger would be present. Once more the counter will be the same: dispersion until the last moment, rapid concentration, concealment, deception and thus surprise.

No tactical conception, however, is of any value unless the individual soldier fights with courage, skill, endurance and determination. Consider then, the effect of atomic weapons, not on tactical doctrine, but on the man!



There is no reason to believe new weapons will alter basic methods

Atomic Weapons and the Soldier

When you are talking of new weapons and studying their use in a particular tactical setting, it is very easy to forget the soldier. But you must not do this. For if you do, all that you say will be valueless. In time of war, no matter how modern or effective the weapons, victory depends in the end on the soldier. It is astonishing how many statesmen have overlooked this point. Not the finest weapons nor the cleverest tactical theories will avail unless the handling of those weapons and the execution of those theories is by soldiers who are fighting with dauntless courage, unbreakable spirit and inspired skill. It is interesting that in the past many statesmen and soldiers have put their faith in the wrong things: in economic strength rather than military preparedness, in their allies rather than in themselves, in weapons rather than in men. Can it be that a similar mistake is now to be made, and that the solution to all problems will glibly be the power of the atom? It must not be, and on the military level there is no indication that it is likely to be. Although we may have weapons of unbelievable power and ingenuity, we do not reduce our armies. On the contrary, we have a larger standing army than ever before. Moreover, conscription has come to stay. It is on men that we rely. For the ingenuity of the British scientist has never equalled the determination of the British soldier. Bryant is relevant again here when he points out that no economic considerations can outweigh purely military ones. Talking of Pitt and his contemporaries in *The Years of Endurance*, he says: "Such statesmen . . . put their trust in a victory based on financial resources. They forgot that the symbols of past commercial activity could not avail on the battlefield. Economic like military strength is not the cause of human achievement but the result. It is not weapons which decide wars in the end but men, for it is men who make the weapons and then marshal and use them." To draw a parallel, can atomic weapons in fact avail on the battlefield? They, too, are the result of human achievement and not the cause. Strategically, they may avail when directed against economic bases like ports and factories. But can they win battles? Is it not likely that if atomic weapons are used on the battlefield, they will merely be a prelude to conventional operations? If so, what is important is that atomic assault does not prevent the individual soldiers from carrying out their fighting mission after the explosion, to counter the conventional attack when it comes. This can only be done by training, by the anticipation and rehearsal of every such contingency of battle. In a similar way we must not expect our own use of atomic weapons to win the battle for us. Do not forget Montgomery's irrefutable point: "Man will still be the first weapon of war." How then is man first to combat the atomic assault, and second to harness it to the conventional military machine?

The answer lies in one word — training. But one word is not enough. Its implications must be examined. The aim of training is to achieve success in battle. What you train are men. You do not train weapons. You train men to use them. But more important than this, you train men to be soldiers. They must, before anything else, have the qualities of courage, endurance, comradeship and sacrifice. On top of this they must be fit and tough, alert and well disciplined and be trained to fight and kill. They must have physical and mental robustness. These things have no relation to weapons. They are fundamental. What comes next is training the man to use his weapons until he is a master of them. For just as it is paramount that the soldier has confidence in his leaders, so is it that he has confidence in his weapons. Do not forget, however, that it is not the weapon itself which gives him confidence, but *his own ability to use it*. Atomic weapons are clever things, too clever perhaps. As Napoleon said, "Cleverness is not needed in war. What is needed is accuracy, simplicity and character." More than anything character, for in character lie the basic ingredients of the good soldier. All training is ultimately designed to produce a man who can withstand the shocks

of war. The renown of atomic weapons perhaps makes their psychological danger greater than their actual. For the well-disciplined soldier the first danger will be overcome by continuous explanation and demonstration. Familiary will breed respect, and potential panic will be dispelled. For the respect will spring from knowledge, and knowledge always counters the fear which comes from ignorance. As to the actual dangers, the remedies of concealment, digging and dispersion have already been dealt with. The trained soldier will be confident that he can not only withstand atomic assault, but can also withstand and defeat the subsequent conventional attack. He will also be confident of following up an atomic attack by his own side. In this case, the problems of the time and place of our own atomic attack are problems for the higher commander, who will require that degree of local air superiority over the battle area necessary to find the target. The opportunity will be fleeting, and the decision to employ atomic weapons, while perhaps not decentralized as low as the divisional commander, will be strongly influenced by him. For it is he who will be able to judge the appropriate moment, and he who will be required to exploit the dividend. All this, too, can be studied and practiced during training.

On the question of training a great deal has been written and spoken. What matters in training is that theory should be moderated by realism, and enthusiasm (of first importance) should be tempered with common sense. Methods of training should be governed by 4 very simple rules. These are: 1) concentrate on essentials; 2) produce physical and mental robustness; 3) master weapons; 4) develop character. Make the soldier realize that it is on him that the success of battle depends, and then you can rely on him. Then atomic weapons will be to him not a mystery, not a terror, but merely weapons either to be resisted or exploited. And he will know that his will and determination are stronger than any weapon. Cultivate this will and determination during every day of the soldier's life, and your efforts will not be wasted. You will have something which is intangible yet invincible.

Remember the principles of training: maintenance of the aim of success in battle; clarity; objectivity; offensive spirit and the cultivation of alertness and initiative; practicality; thoroughness. These principles are not changed by the advent of atomic weapons. What of the principles of war themselves? Are these changed?

Atomic Weapons and the Principles of War

I have said that war changes in its weapons and tactics but not in its aims and its strategy, in its methods but not in its principles. It is clear that a sound tactical plan will normally conform to the principles of war. Thus it is possible to say that if atomic weapons do not change the principles of war, then these weapons are unlikely to have far-reaching effects on the tactical handling of military formations in the field and since all tactical discussion *on paper* must be hypothetical in some degree, examination of this particular point may well yield conclusions of greater value than consideration of particular tactical problems, which are best answered on particular pieces of ground. If the progress of modern weapons changed the principles of war, then there might be a case for their influence and reliance on them to assume first importance. But they do not. The principles of war are concerned essentially with personal, human factors. It is clear that such principles as offensive action, surprise and concentration of force depend in their application on weapons, but the true observance of these principles relies not on the weapons themselves but on their employment. And they are employed by men. If three principles of war are more important than any others, these are the *selection and maintenance of the aim*, the *maintenance of morale* and the *concentration of force*. Consideration of these will serve initially to illustration their relationship to atomic weapons.

Singleness of aim was one of the primary concepts of Napoleon. This is an easy thing to say. It is not easy to pursue. Too many commanders have slipped into the fatal error of losing sight of the aim, of becoming inextricably involved in minor and irrelevant successes, and forgetting the main issue. Even Napoleon, when his judgment became warped by too much success, failed in this regard. For when his air lost its singleness, the united effort was gone. He doubled his purpose and halved his army. And here is the point. Singleness of aim, which is closely allied to concentration of forces, is a matter of the mind, not of weapons. If pursuit or maintenance of the aim is difficult, how much more so is its selection. What a stumbling block this has been to many. If the aim is not right, nothing will be. Everything else in battle is related to it. This is why it is called the master principle. Do not forget that it is essentially mental. How interesting it is to see that during the course of a campaign, the aim changes. Northwest Europe gives us the classic instance. After the establishment of the bridgehead, the aim was to destroy the German forces, and for a time this was the right aim. But it changed. Some saw that it had changed to the capture of the political capitals of Eastern Europe, others did not. The others won and the result is well known. I make this point to illustrate that atomic weapons do not influence this, the master principle of war. It is, however, true to say that the aim of a particular operation might well be to create an atomic target, destroy an atomic launching site, or exploit an atomic burst.

At first sight, concentration of force might be thought to imply nothing more than a mass of soldiers and weapons. But to be successful, concentrated force must comprise moral as well as material superiority. There are also the all-important questions of timing and placing. These are what make concentration decisive. Atomic weapons have a curious effect on the requirement of concentration. On the one hand, if we are to employ atomic weapons, we need to concentrate in order to make the enemy do the same and thus present us with an atomic target. On the other hand, if we are to avoid presenting such a target ourselves, we must be wary of the timing, duration and security of our own concentration. But none of

these considerations alter the fundamental need for concentration of force in battle if decisive results are to be won. The most important thing to remember is that concentration is a matter of time rather than of space. The atomic weapon does not change the principle. The weapon provides only the means to kill. It does not provide the will to kill. This is provided by morale.

Montgomery has described morale as the most important single factor in war. Morale is, however, closely allied to weapons. One military pamphlet *The Conduct of War* explains this point very clearly. "Morale in modern war depends increasingly on equipment, especially on weapons. Yet all soldiers must at times expect to find themselves at a disadvantage in this respect either compared with the enemy or against conditions of climate and terrain. The effect of this on morale can be minimized if the troops can be convinced that everything humanly possible is being done by everyone concerned to redress the balance. Once convinced of this they will take a fierce pride in overcoming the handicaps of inadequate equipment." The alliance between morale and weapons is a curious one therefore. Given the best and latest weapons, including atomic ones, a soldier whose morale is already high, will by his confidence in those weapons, develop even higher morale. Yet by a strange contrariness of character, the British soldier, when denied the best of weapons or the defensive measures against enemy weapons, will if his morale has in other respects been properly cultivated, rise to even greater heights of endurance and courage. This is perhaps the true test of morale. The lesson here is that although atomic weapons may influence morale to a great degree they (that is to say possession of them or of the counter to them) are not indispensable to it. For morale is a state of mind. At the same time we must not lose sight of the importance of such weapons. They in their way are as vital to success in battle as morale. But they are worthless unless in the hands of determined soldiers. It is the coalition of the two which is required.

It is clear, therefore, that atomic weapons may change in some measure the application of these three principles, but not their observance. There are two other principles whose observance may be exploited to the full by use of such weapons. These are economy of effort and surprise. If ever a weapon existed, whose use offers a decisive tactical victory with a minimum of effort (although not expense), that weapon is the atomic missile. In a similar way an atomic weapon may, if employed with secrecy, originality, audacity and rapidity, contain the very acme of surprise. But in either case the atomic weapon cannot *by itself* win the decisive victory. The conventional counterattack or assault must still deal the final blow. Examination of the other principles of war will also show that in the final count, they are not affected by weapons, but are things of the mind. Offensive action finds expression in the will to wrest the initiative from the enemy, to break his will by aggressive action, never to give him a moment's respite — these are what the offensive demands, and these depend on the personal qualities of commanders and soldiers. Co-operation is based essentially on team spirit; flexibility means more than anything flexibility of mind. The whole thing is mental from beginning to end. Napoleon confirms the point when he says: "In war all is mental."

Here then, remembering that tactics are subordinate to the principles of war, is a further indication that atomic weapons are unlikely to cause any fundamental change in current tactical doctrine.

Conclusion

The first and third aims of this article were to examine the effect of atomic weapons on tactics, the one particular, the other general. It is, I think, clear in both cases that *tactics have not been invaded by the atom.* But they will have to adjust themselves to the employment of atomic weapons, just as organizations must do so. In particular the problems of concentration and dispersion, concealment and deception, digging, alertness and night fighting must be studied. Even so, the basic tactical principles involved in handling the armored division, or for that matter any formation, are not changed. For atomic weapons in no way remove the need for hard, cunning, ruthless, aggressive and determined fighting. And this will only be done by the man. Training will see to it that the man has the will and the fighting determination and the skill which are required of him.

The second aim was to show that too much reliance should not be placed on the possession of atomic weapons, but rather on the fighting determination of the individual soldier. You will be told of future developments which will revolutionize war. You will be told of machines which will outdate the Western World as they have already outdated the Eastern. You will be told of weapons which will cross oceans and destroy masses. These things do not matter. What does matter are human qualities and human principles, moral causes and the determination of the individual. For war is an art not a science. Let us abjure forever the fallacy that weapons are more important than man. They are not. Never be deceived by the offer of a weapon if it is accompanied by the allegation that it will do away with the need for large armies and determined soldiers. You can be sure that the allegation is false. For machines and weapons are governed by the slide-rule, but the laws of war are subordinate to the rule of human nature. People will tell you that science is progressing so fast that our present conception of armies and weapons and even war itself, is subject to change. Listen to them certainly, but remember this. In a modern army change is inevitable, and the question is, not whether you should rely on what is outdated and has been succeeded by scientific progress, but whether you should rely on what has proved its worth over centuries of war. The very fact that weapons change and that what could be effective yesterday, cannot be effective today, confirms once more that it is the unchanging character of the individual soldier, which is the fountain of military strength. For what good are weapons, even atomic ones, without the men to man them, the commanders to direct them and the fighting determination to make that combination irresistible? Echo Montgomery when he says: "Man will still be the first weapon of war."

USMC

STOP THOSE GUNS AT NIGHT!

By Capt M. B. Reilly

DURING 1952 AND 1953 THE 1ST Marine Division, occupying the Western terminus of the UN battle line in Korea, was never seriously challenged on the ground.

The war essentially then became a supporting arms conflict. The indispensable achievements of our infantry are not belittled by the fact that to oppose successfully the preponderance of enemy force we depended upon our unchallenged tactical air and efficient field artillery.

Our enemy adapted his tactics to strike at us when our superior supporting arms were most limited — during the hours of darkness. Thus, only during the day was it an American war. But as evening approached and dusk fell, the initiative passed from us to him. Our air effort moved northward, except for an occasional lone radar-controlled bomber. Enemy artillery belched forth from hundreds of muzzles that had lain silent during the day.

On outposts a familiar pattern developed during these years. Our men retired to heavily reinforced covered fortifications. Typically, physical contact with the main line of resistance was severed until dawn. Frequently, our telephone communications were broken, and under an incessant barrage of mortar and artillery fire, our men crouched and waited for the probing infantry advancing behind and even through the fog of incoming explosives.

Counteraction on our part was limited to suppressive fire delivered in volleys against previously identified enemy weapons that were suspected of being active. Fire missions conducted against visible counterbattery targets were rare and usually conducted by observers who were themselves pinned down and in positions where observation was limited and difficult. Thousands of rounds from our guns and mortars were sent into the darkness on previously registered concentrations in the form of barrages, "box-me-in-fires" and on suspected enemy assembly and communication routes. In most instances they were neither observed nor positively directed.

It was as if we were a boxer, lacking the stature of our opponent, but with two powerful fists: One, our tactical air, hung by our side at night; the other, our artillery and larger mortars, struck blindfolded at the giant it had cowered in the light.

There can be no doubt that the enemy had chosen the conditions most stultifying to our capabilities and best suited to his own limitations. We seemed to have a strong umbrella spread over us protectingly during the day but folded at night and only capable of being used to poke into the darkness.

Light! It was light that made the difference as any "Snuffy" would readily admit crouching in his bunker as night drew over the lines. A volley of provocative articles have appeared in our military magazines in the last few years with this as the problem they sought to attack. Night attacks, tanks mounting searchlights and antiaircraft searchlights for direct and artificial moonlight uses are among the answers offered to this problem.

Here is another possible solution, not of the entire problem, but of one of its most important aspects: night-time counterbattery.

Counterbattery is defined in the field manuals as, "All activities carried on for the purpose of locating, neutralizing or destroying enemy artillery or fire control installations." At its best, it normally employs a weapon heavier than the target it seeks to attack. It is conducted by an observer employing one gun and by means of a "precision destruction adjustment" mission seeks to destroy the enemy materiel.

If such a technique is incapable of being used, by reason of inaccessibility of the enemy gun, poor conditions of observation or other handicaps, volley fire by either battery or battalion size units is brought to bear upon the target or suspected target locations. The object is then to intimidate the enemy guns into silence through fear of their destruction or by causing casualties among their personnel, disrupting their communications or obscuring their observation.

The former preferred method demands positive target identification and continuous observation throughout the mission. The other and less effective technique may be employed for target locaton purposes: flash and sound ranging units, countermortar radar, shell reports, crater analyses, aerial photograph interpretation and all other intelligence information.

The standards for observation of such an "area type mission" are not as demanding as those of the precision method. In the past and the foreseeable future, the latter method was and will be restricted to daylight uses. The area method has also been effectively utilized chiefly during the same period of light. It is suggested here that during periods of darkness we can also accomplish it by employing aerial artillery observers and illuminating rounds.

This method of counterbattery neutralization was not generally used during the later period in Korea because of the limitations im-

posed upon us in quantities of available illumination ammunition. However, maneuvers have indicated its feasibility. The difficulties inherent in such a procedure must be recognized at the outset.

An aerial observer at night is faced with a bewildering picture on a battlefront below him. The flashes of enemy guns are visible enough, but the difficulty arises in accurately pinpointing the firing sites. More confusion enters the picture if friendly rounds explode in the vicinity of the suspected hostile guns. The difficulty then is to distinguish the flash of the one from that of the other. Here's how one proposed method would work.

An AO is on station over the lines prior to darkness. Complete familiarity with the terrain is mandatory. Search areas of suspected positions have been shown to the pilot and observer in a briefing before takeoff. In the air he carefully identifies these areas to himself and his pilot. As darkness falls and the reports of shelling are received at the artillery fire direction center their probable source is radioed to him. Friendly fire in the general vicinity of the suspected location is suspended at his request. When he spots the flashes of the hostile guns he calls for an illuminating shell to burst above the suspected location.

If he has been able to reasonably confine the suspected location to a small area, subsequent illumination is adjusted closer to the target. It is essential during this firing that the pilot, in addition to keeping the plane clear of the trajectory of the friendly fire, also keep well above the bursting height of the round. Further, to prevent the pilot from being blinded by the glare, he must avert his eyes when a round is "on the way." A filter used in the binoculars of the observer may possibly be helpful in preventing similar difficulty on his part. Generally, however, the observer's night vision will be gone for the rest of the mission.

Conduct of fire throughout this procedure must be at the command of the observer unless otherwise requested by him. If terrain features are difficult to identify, one or more searchlights from locations known to the observer and on azimuths announced to the observer, or requested by him, may be used to establish reference points or compass directions. Another method of observer orientation may be achieved by placing artillery fire at his command on designated locations to give him a reference point from which he can make subsequent adjustments.

If the illumination has been effectively brought close to the hostile position it may, merely through its own effect, cause a cessation of firing by the enemy. This is particularly likely if the enemy guns are in open positions. The great advantage of aerial observation comes to the fore at this time in the ability to detect positions appearing in defilade to ground observers. Such cover is of little flash-hiding value from aloft. It is considered likely that this illumination, or the unseen presence of an observer heard above, may solely by themselves give relief by silencing the battery through the threat of their presence. If firing persists, however, there is reasonable likelihood of adjusting high explosive fire accurately onto the position revealed under the light.

The use of rotary-wing aircraft, as well as liaison-type planes, should be considered in connection with this type of mission. The difficulty of spotting a helicopter hovering high in the night should overcome the vulnerability of such craft to hostile fire. The definite advantage of such a vehicle for night fire adjustment is apparent if we consider that the observer is not so apt to lose sight of his target in the interval between the hostile gun's firing. He will be able to look directly at the area instead of being forced to look over alternate sides of the plane, as is now necessary in the usual fixed-wing aircraft.

Helicopters could also be used to locate the hostile gun in another manner. An observer, upon spotting the flashes of guns, would direct the 'copter until it was hovering above the enemy battery. To insure that he was directly over the guns it would be necessary to employ a cross leveling vertical-type sight. His location, and that of the guns below him, could then be radioed back. This can be quite accurately obtained, either visually by the observer, shooting azimuths to 2 known points, or by other means. A method of "fixing" upon him using either countermortar radar stations or radio direction finding statons might be feasible.

An alternate system of providing illumination is possible by having on station a plane heavily armed with flares. Communication between this plane and the observation craft would have to be established to assign courses and altitudes and to prevent their conflicting with each other. Adjustment of flares to be dropped could be done by the observer in a manner similar to that employed with artillery but with increased emphasis on reference points visible to the flare plane.

These techniques of adjustment are by their nature necessarily less precise and simple than their daytime counterpart. They have decided advantages over the punching-in-the-dark methods that are the only present solution, however. Illumination is expensive but surely will be more economical of ammunition and purposeful of control than the thousands of rounds we poured out in defense of outposts on "box-me-in-fires" and "fire-on-position" type missions.

Would naval gunfire be suitable to accomplish this mission? When such a weapon is available, it most definitely would. This is especially true considering its particular advantages—rapid, electronic fire control, high rate of fire, organic spotting aircraft, abundance of illuminating ammunition, etc. Terrain would have a particularly decisive limiting effect upon its capability, however, if the defiladed artillery position that is usually encountered is considered in relation to the flat trajectory of the naval gun.

Does the answer lie in another direction? Perhaps a combat air patrol on call over the lines for use against enemy guns or other activity might better meet the threat. This could employ dive bomber attack with illumination provided either by air or artillery. Difficulties of co-ordination, target identification and control would be formidable but can be overcome.

Let's stop fighting a "brown-bagger's" war that ends at 1630! We must use the other half of each day.

USMC

PROFICIENCY From Training

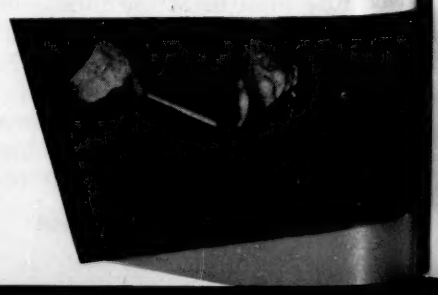
By Capt R. C. Schulze

PROFICIENCY COMES WITH CONstant and thorough training. This is a basic premise in any vocation, but it is a false premise if the training administered is not the right kind. To be the right kind, the training must be clear, integrated and has to point toward some clear and definite goal.

As Marines, we consider ourselves highly proficient in our profession. We train constantly to ensure that each Marine is fully adept at his art. As a rifle company commander, I worked for the day when I could truthfully tell myself that each Marine in my company was competent in basic military knowledge, commensurate with his capabilities. I hoped for the moment when I could confidently feel that every man in my company was ready for his final exam — combat.

Perhaps my goal was too idealistic, but I firmly believed that the higher I aimed, the better my results would be. Even though I realized that I was aiming high, my results were disappointing. We were not getting worthwhile returns for the long hours invested in training. Perusal of our training schedule for several weeks showed that a minimum of 44 hours per week were devoted to training. No time during the working day for allowed for Company Commander's time, cash sales, athletics, or even pay call. During the 8 hours of the working day time was alloted for one thing and one thing only, and that was training. The thoroughness of our training, when judged from hours per day, appeared to be more than sufficient to ensure proficiency. Further study revealed that lesson plans were well written and well presented. Motivation was present. The majority of men were eager to learn. The only weak link in the learning process chain appeared to be an inadequate opportunity for experience and poor distribution of hours per subject.

As an example let us take map reading. This important subject was alloted 5 hours in each quarterly training directive. These 5 hours were divided into 4 classes and distributed piecemeal throughout the training quarter. If we multiply this dissection by 20 different subjects, the result is more akin to a crossword puzzle than it is to a guide to proficiency. The training requirements were met, and each working day was neatly filled with 8 hours of subjects, but there was no unity or cohesion between various phases of any subject. Lectures, even when given by the same instructor, were disjointed and they overlapped needlessly because of the delay between each presentation. The little knowledge that was retained from one short lecture was confused by the interference of lectures on other unrelated subjects that were sandwiched between a series on map reading.



Our present scheduling system lacks continuity in training—

continuity in training means proficiency in performance

In contrast with this method of training, I considered our requalification program. We take pride in our rifle marksmanship, and for 2 weeks each year Marines eat and sleep the M1. By the end of this period they are ready for testing, and the results speak for themselves. We expect every Marine to be proficient with the rifle, and he is after 2 weeks of intensive training. While we expect the same proficiency in other military subjects, we ignore the method of training that has proven highly satisfactory with the rifle.

By qualification day Marines know how to fire the rifle. But to survive in combat, he has to know more than how to fire his M1. He must be equally effective in firing other small arms, in reading a map, in hand-to-hand combat, in first aid, demolitions, patrolling and numerous other necessities which make him effective under all circumstances

To achieve this goal of all around effectiveness, why don't we use the method of training that has been proven on our rifle ranges? Why not give a Marine the same opportunity to snap in with the compass for a few days instead of for a few broken hours? Let him shoot azimuths for a day or two and find his way to the target, then let him go the course on his own. Find out if he can qualify with the compass and a 1:25,000.

Let's take a look at a hypothetical version of such a training schedule. It would be divided into quarters as is the present type of schedule. However, each quarter would be limited to a small number of related subjects that could be taught thoroughly during the 3-month period. For example, let us take the first quarter of any year. We could begin with elementary subjects such as weapons. In the weapons quarter we should begin with the BAR because it is the basic infantry weapon, the weapon around which our fire power and tactics are developed. Being the most important small unit infantry weapon it naturally should be well understood by all Marines. The first 2 weeks, therefore, would be spent learning and firing the BAR, just as we do with the M1. Concurrently, classes would stress the BAR's place in the fire team, how to use the weapon in squads and platoons, the positions of the BARman in various tactical formations. In effect, we would let the Marine discover the reason for the BAR, and its advantages, or just how the BAR fits into the picture.

The second 2 weeks would perhaps be spent with the light machine gun and so on, until by the end of the first quarter each Marine would really know how to operate, employ and care for all of our basic small arms, as well as knowing their relation to one another. The final week of the quarter could be utilized for testing and competitive firing.

The second quarter would develop small unit tactics, beginning with arm and hand signals, camouflage and concealment, patrolling and ambushes. At the end of this quarter all of the learning since the beginning of the year could be integrated in platoon problems and live firing exercises.

The third and the final quarters of each year could include larger level problems, but they still would be primarily concerned with the continuation of basic courses, such as hand-to-hand combat and night firing. The "Snuffy" seldom gets anything out of a large scale exercise, except exercise. Staffs would not suffer from a de-emphasis of big exercises. More time would be available to them for the running of CPXs. It is the Snuffy who takes the high ground. He needs all the training we can give him, but let us not fall into the trap of thinking that by increasing the hours of training, we are increasing proficiency. We can only achieve proficiency by learning one subject at a time, emphasizing relationships and gradually integrating these subjects into a meaningful whole. We need training by subject, not by hour. Let's forget about the date column of the training schedule and pay more attention to the column marked "Subject." The hours will take care of themselves. A training schedule has to be built like a flight of stairs, leading from the threshold of Boot Camp through the landings of knowledge, experience, and insight before it can reach the first floor of proficiency. USMC

★ ★ ★ ★

Lady's Day

THE MARINE CORPS is adopting a new drill. We want our fire team leaders to learn how to give commands. But one of the Corps' most famous officers never did learn how to command "Squads, Right About" in the approved manner.

Louis Cukela was promoted to major at about the time the Corps adopted the simple drill which is just now passing. But as a captain he consistently murdered the commands that were proper for the old, complex drill.

His troops quickly learned how to interpret Capt Cukela's commands even though they were unorthodox. However, Cukela's dog, Lady, was forever running through the ranks and confusing both the troops and the captain.

Lady was consistent, though. Every time the captain would start to say "Squads . . ." she would make a bee line for the first squad. This caused Cukela to evolve a standard command that he gave in exactly this manner: "Squads, Right. Two times. And Don't foul it up. Git out d'way Lady. M A R C H!"

Maj D. D. Nicholson

(The GAZETTE will pay $10.00 for each anecdote published. Submissions should be short and pointed.)

Operation Citadel

A STUDY IN COMMAND DECISION

This is an account of the last major offensive the Germans were able to mount on the Russian Front during World War II. This particular operation points up the vital necessity of basing plans on the immediate situation and then executing them while they are still valid. Procrastination only leads to defeat. This is true at any level, from the fire team on up. Although political interference in German military operations is an old story, the experiences of the soldiers here are worth noting.

Prepared for the Gazette by the author from his book, Lost Victories, *Athenaem Press, Bonn*

By Fieldmarshal von Manstein

WHEN THE WINTER CAMPAIGN OF 1942/43 ended, it had not brought to the Soviet command the decisive strategic success to which they had aspired and for which they had hoped. This campaign began by a Russian breakthrough on the front held by the Rumanians along the Volga and along the Don on either side of Stalingrad.

Certainly, the powerful Sixth Army had been lost, thanks to Hitler's insistence in demanding that it stand fast at Stalingrad. In the course of three great Russian offensives, two Rumanian, one Italian and one Hungarian Army were completely eliminated from the battlefield. An additional German Army had also been seriously weakened. The Germans were forced to give up all the territory as far as the lower Volga and to the Don, as well as to the northern Caucasus which they had won in the summer offensive of 1942. But the decisive operational objective — the severing of the entire German southern flank (Army Group Don and Army Group A) and their encirclement against the Sea of Azov — had not been successful for the Soviet command even though the strategic mistakes of Hitler had played right into the hands of the overwhelming and immeasurable superiority of the Russians. The Germans succeeded not only in extricating themselves from the noose, but at the conclusion of this campaign dealt the enemy severe blows in two battles between the Donets and the Dnepr and at Kharkov — in spite of the fact that the enemy's operational objectives seemed to have been so nearly achieved. At the beginning of the spring thaw period of 1943, the German front again stood firmly in positions behind the Mius and the Donets, a salient extending from Taganrog at the Sea of Azov north to Kharkov, the same positions from which the summer offensive of 1942 had been launched.

The question from the German point of view now was how could the campaign on the Eastern Front be further conducted during the coming summer? It was absolutely clear, that after the loss of so countless many units the necessary strength would no longer be available for a decisive offensive such as we had conducted in 1941 and 1942. What could still be achieved, however — provided there was intelligent leadership on the German side — was to force the enemy (as a result of the further weakening of the strength of the Soviet Union) to settle for a remise — or end the war by a return to the status quo, a thought which at that time in no way seemed to be overoptimistic. By assuming a purely defensive form of warfare — that is a war of position — this objective could never be reached, to be sure. In the first place, the number of German divisions was insufficient for a positive defense of the overextended front between the Baltic and Black Seas. In the second place, it was feared that the Soviets would remain passive until the Western Allies would be able to establish a Second Front in Europe, a danger which was more and more becoming a possibility in view of the developments and the situation in North Africa.

For the German command there was now only a limited time available in order to achieve a condition of remise in the East. This could only be achieved if they succeeded in dealing the enemy powerful blows in limited engagements that had become necessary to accomplish the concept of the *strategic defense.* Thereby enemy strength — especially through the losses inflicted upon him by the capture of personnel — could be decisively weakened. This demanded that operations which were to be conducted must be based on *flexibility* and *mobility,* in which the superior ability of the German military leadership and their troops could still be the decisive factor.

In regard to the question of weather, we had to consider what the Soviet command would do at the conclusion of the muddy period of thaw. Would Stalin wait until his allies had opened a Second Front on the Continent, for which he had asked again and again? As much as there was to support this idea, so was there much to be said against it. For psychological reasons, would it be possible for them to switch over to a long interlude of inactivity, in view of the powerfully developed propaganda to "Free the Holy Soil of Russia?" Furthermore, wasn't it logical for the Kremlin to attempt to prevent the Allies from entering the Balkans, the traditional goal of Russian expansionist policies?

Therefore, if one considered a resumption of the Soviet offensive, as soon as the enemy had made up for the losses of the winter campaign, it appeared certain that the center of gravity of his attack would continue to be directed against the southern sector of the German Eastern Front, i.e., against Army Group South (until now, Army Group Don).

The German front bulged far to the east in the area south of Kharkov along the Donets and the Mius, encompassing the valuable coal mining and industrial area south of the Donets. This protruding salient indeed invited the enemy to make an attempt to cut it off. If he succeeded in effecting a breakthrough in the area around Kharkov or over the middle Donets, he could still succeed in eliminating the German southern flank against the coast of the Black Sea. (At this time, Army Group A was still occupying the Kuban bridgehead!) At the same time such a tactical accomplishment would again result in bringing the valuable Donets area, as well as the breadbasket of Ukraine into his hands. Likewise, it would open the approaches to the Balkans, especially the Rumanian oilfields, and with it, the political consequences which such a development of the situation would have had on the attitude of Turkey. In no other sector of the Eastern Front did such similar strategic and over-all worthwhile political opportunities to further their war effort offer themselves to the Soviet leadership! It could therefore be assumed that when the Russians resumed their offensive again, that the main effort would be directed against Army Group South. This, of course, did not exclude diversionary offensives in other sectors of the Front in view of the overwhelming Russian superiority of manpower.

These considerations were presented to the Army Group Commander of Army Group South as well as to the *Oberkommando des Heeres*—and thereby Hitler. Hitler, in the final analysis had to decide if the over-all situation permitted us to wait for the Soviet offensive, and then at the most suitable moment to conduct a counterblow. Or, if the opportunity offered itself, to strike as soon as possible and herewith (always in the concept of the dynamic offensive) launch a limited offensive.

The Commander of the Army Group maintained that the first solution was most desirable because it offered more favorable tactical opportunities. As a result, an operational proposition was presented to Hitler as early as February. On the basis of this proposition our salient extending in a bulge to the east along the Donets and Mius would be given up according to plan in order to force the enemy to follow us in a westerly direction to the lower Dnepr. (This proposition was based on the assumption that if a Russian attack could be expected, it would come in the Donets area with a pincers movement from the north and east – an attack that sooner or later would be supplemented by an offensive in the Kharkov area.) At the same time, all reserves which could possibly be made available – especially the greater greater portion of the Panzer units – were to be readied in the area west of Kharkov. This would enable them first to strike the enemy assault units which were expected in that area and, thereafter, to strike the enemy advancing to the lower Dnepr in the flank. Thus seal his fate on the coast of the Sea of Azov just as he had planned to do to us on the Black Sea.

But Hitler in no way lent his support to this plan. He insisted that the Donets Basin was vital for the further conduct of the war. Therefore, in no case — not even for the time being — could it be given back to the enemy, whose tank production was seriously hindered by the loss of the Donets coal. Also, he feared political repercussions on the part of Turkey and Rumania. Mainly, he rejected the plan because he felt that we must fight for every foot of ground which he had seized from Stalin in the winter of 1941. It was to this idea that he ascribed "the deliverance of the German Army from a Napoleonic retreat" in the winter of 1941. Above all he undoubtedly shied from the risk that unquestionably lay in our proposed operation. He lacked confidence to deal with such a risk because he, in spite of a definite touch for operational questions, did not have the genuine skill of a great field commander.

As a consequence, the idea of a surprise attack gained prominence. An attempt was to be made to conduct a limited attack against the enemy before he could recover from his losses in the winter campaign and again restore his most recently battered forces.

The Soviet front which bulged far to the west into our front lines around the city of Kursk offered itself as the objective for such a blow. The Russians had been able to maintain this wedge on the boundary between the German Army Group South and Army Group Center because of the onset of the period of thaw. In this area considerable Soviet forces were located which could be cut off if our attack succeeded. At the same time, from the tactical point of view, this bulge offered a jumping-off point for possible attacks of the enemy against the flanks of both German Army Groups. If the German assault was launched early, then it could be hoped that the enemy could still be caught in a state of unpreparedness. In particular, he would have to throw his tank units, which had been badly mauled toward the end of the winter campaign, into the battle prematurely, and thereby their defeat and annihilation would be a strong possibility. This led to Operation "Citadel," the last great German operation in the East. For this attack against the Kursk bulge two armies from Army Group South were made available—the Fourth Panzer Army and Army Detachment Kempf—with a total of 11 Panzer and Panzer Grenadier divisions, and 5 infantry divisions. This naturally meant a further weakening of the front-line troops and re-

Russian counterattack capability—massive forces at any point

serves of the Donets and Mius fronts.

Army Group Center stood ready to attack from the north with the Ninth Army, consisting of 6 Panzer and Panzer Grenadier divisions, and 5 infantry divisions. Herein lay the greatest danger, in that this army had to advance against the enemy from the north and east to reach the bulge which extended eastward around Orel. This would offer the enemy the opportunity to attack the Ninth Army from the rear.

The first half of May was anticipated as the best time for the execution of the German Operation "Citadel," since it was hoped that the terrain would be sufficiently firm by then and that the enemy would not yet have completed the reorganizing and re-equipping of his units — his armored units in particular.

At the beginning of May, however, Hitler overruled the opposition of the commanding generals of both army groups and decided to postpone Operation "Citadel" until June, since he hoped by then our Panzer divisions, equipped with new tanks, would be even stronger. He persisted in this opinion despite the indication that postponement of "Citadel" might well ruin its chances of success. For if the situation in Tunisia continued to worsen and the enemy made a landing on the Continent, the armies involved in "Citadel" would be urgently needed elsewhere and this operation would, of necessity, collapse. Furthermore, he did not appreciate that the longer we waited the stronger the Russians would become in armor, since their tank production unquestionably surpassed ours. Because of delays in the delivery of the new tanks, the Army Groups could not commence to execute "Citadel" until the beginning of July. Thereby the most essential advantage of the dynamic offensive was forfeited. The concept of this offensive was based on the supposition that it could be conducted before the enemy had again regained his strength and would have overcome the setbacks suffered at the end of the winter. At the same time the danger grew unavoidably greater for the German side the longer we waited for the beginning of Operation "Citadel." This was especially so for the armies of Army Group South which were located in the Donets-Mius bulge, inasmuch as all the forces which could be spared had been made available for this operation. Most crucial was the Orel bulge, the point of departure for the Ninth Army of Army Group Center.

On 5 July the German armies were finally able to launch the attack. All deceptive and covering measures were, of course, employed. Nevertheless, it could not be expected after such a long hesitation that this offensive would catch the enemy unprepared. In the first two days of the attack the Ninth Army of Army Group Center succeeded in making a penetration about 14 km deep into the enemy defense system. In heavy fighting we succeeded, in addition to warding off counterattacks of enemy reserves, to extend this pentration several kilometers further by 9 July. Then, however, the Army came to halt before heavily fortified heights in the rear. Their intention to resume the attack after several days was frustrated by the enemy. On 11 July he went over to the attack, and with strong forces struck the Orel bulge from the east and the north. The Army Group was forced to throw strong mobile forces from the Ninth Army into the battle around the Orel bulge in order to support this front held by the Second Panzer Army.

Fortunately, the offensive developed favorably in the zone of action of Army Group South. Here, too, the attack through the deeply echeloned defensive system was difficult and moved forward only slowly. In spite of the tenacious defense, by 11 July we succeeded in pushing our thrust into the last enemy positions and into the area of Prochorovka and Oboyan. At the same time the counterattacks of the enemy's strategic reserves, rushing into battle, were thrown back. Thereby, we eliminated 10 enemy armored, i.e., mechanized corps or at least inflicted severe casualties. By 13 July the enemy had suffered losses amounting to 24,000 prisoners, 1,800 tanks, 267 pieces of artillery and 1,080 antitank guns at the hands of Army Group South. This was the high point of the battle. The crucial moment upon which would be decided whether it was to be a victory or a defeat, seemed to be near, when on 13 July the commanding generals of the two Army Groups involved were called before Hitler. The latter opened the conversation with the declaration that the Western Powers had landed on Sicily on 13 July and that the situation there was very serious. The Italians would not fight at all. The loss of the island was probable. The next step could be a landing in the Balkans or in southern Italy. The formation of new armies in Italy and in the Western Balkans was necessary. The Eastern Front would have to provide the units. "Citadel" could not be continued. It happened, therefore, exactly as the commanding general of Army Group South had warned Hitler in May if Operation "Citadel" was postponed.

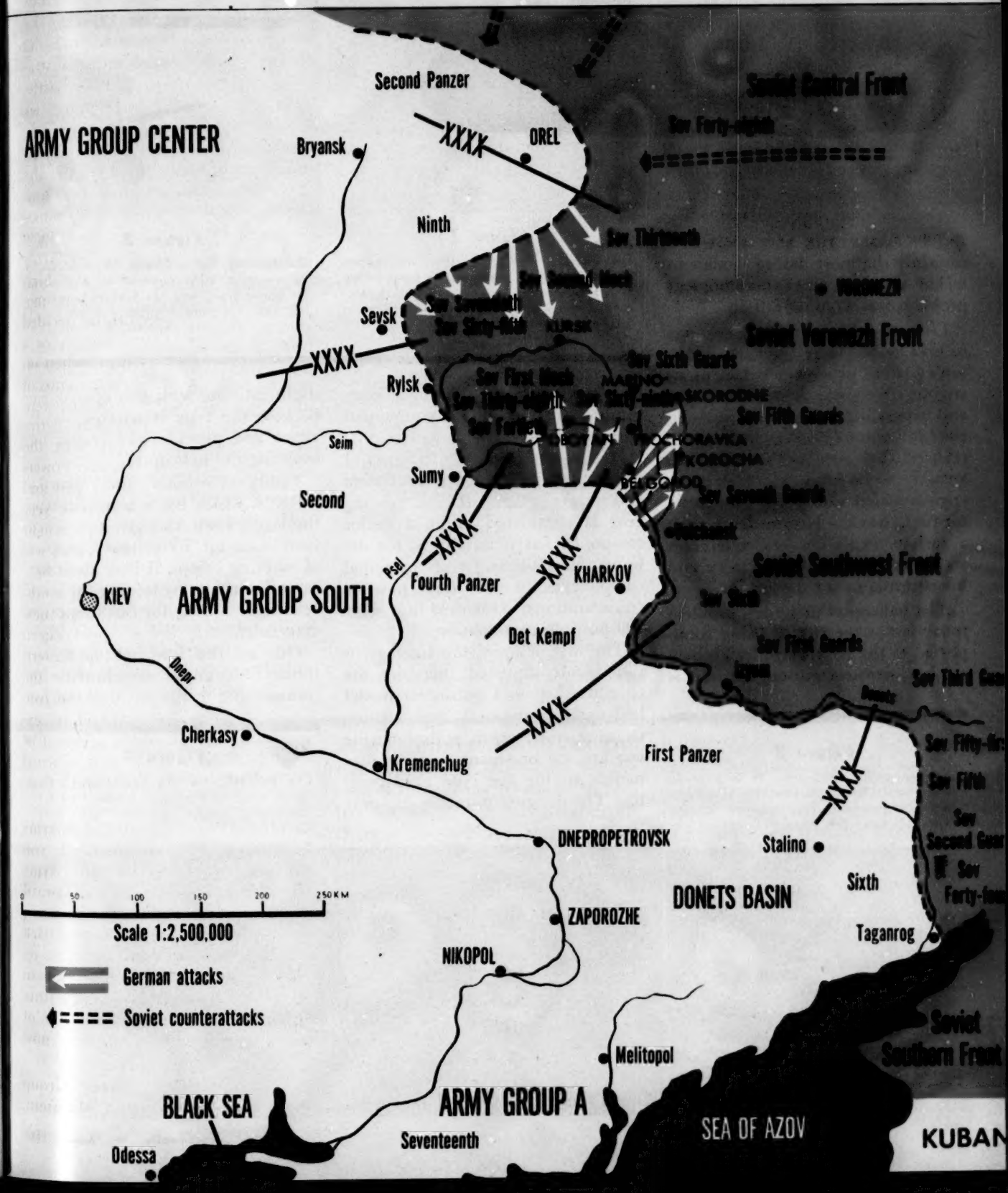
The commanding general of Army Group Center, Fieldmarshal von Kluge, reported that the Ninth Army was unable to continue its forward movement. Furthermore, the Army Group had been forced to pull back its fast mobile units in order to repulse a deep enemy penetration in the Orel bulge. Either the continuation, or even a later resumption, of the "Citadel" offensive was now questionable.

The commander, Army Group South, Fieldmarshal von Manstein,

declared in reply to this, that as it concerned this situation, the battle had reached the point of culmination. To break off the battle at this point would be tantamount to handing the victory over to the foe. In no case should the pressure ever be relaxed on the enemy before the strategic reserves, which he had thrown in the battle, had been destroyed.

Hitler deccided, on the basis of the situation in the Mediterranean, that Operation "Citadel" must be broken off in the zone of action of Army Group Center. The only thing he agreed to was that Army Group South could continue the attack until it had achieved the aforementioned goal — the destruction of the enemy armored reserves. In fact, this intention could not even be pursued any more, since already in the next few days the Army Group had to reassign several Panzer divisions to Army Group Center. The attacking elements of both Army Groups had to be withdrawn to the point of departure from whence they commenced their attack originally.

Thereby, the last offensive in the East ended in failure. USAMC



THE HELIC

By Maj A. J. Clapp

Figure 1

The Sikorsky XHR2S transport helicopter. It is a single rotor configuration powered by twin reciprocating engines and has retractable 3-wheel-type landing gear. (Picture: Sikorsky Aircraft Corp)

Figure 2

The Hughes Flying Crane. It is a single rotor configuration powered by a pressure jet power plant and has 4-wheel-type landing gear. (Picture: Hughes Aircraft Corp)

PROBABLY THE BEST KNOWN — certainly the most daring — man to tackle the helicopter development problem was Thomas Edison.

Like all other aircraft developers of his day, the largest hurdle in Edison's path of progress was lack of an engine which was both lightweight and powerful. After working with electric motors for a while he realized they wouldn't provide the answer. So he hit on the idea of an engine which would use guncotton for fuel. But the obvious happened: a serious explosion one afternoon wiped out both his laboratory and his enthusiasm for the engine.

The helicopter designer's problem today is not the risk of being transported to the next world by his own crudely constructed engine. It is largely a matter of striking a compromise in selection of component parts.

Helicopters consist of 3 major parts: fuselage (body), rotor system and power plant. If the landing gear is considered to be a major component, as it usually is, the designer must consider 4 principal components in all their possible configurations. This runs into some 100 possible combinations.

The first of these, the fuselage, is functionally designed; therefore, the title attached to a particular model helicopter (transport, cargo, utility, training, observation, antisubmarine warfare, or one-man) is in reality merely stating the type fuselage it has. The designer normally has only slight latitude with this component because the type is selected in advance and provides the reason for building the helicopter.

Figure 1 shows the Sikorsky XHR2S, which has a transport-type fuselage. Even though it is fitted with seats for its primary purpose of carrying troops, it may also carry cargo internally by folding the seats. It also has a sling for carrying cargo externally.

One of the few helicopter airframes designed specifically for transporting cargo is the Hughes

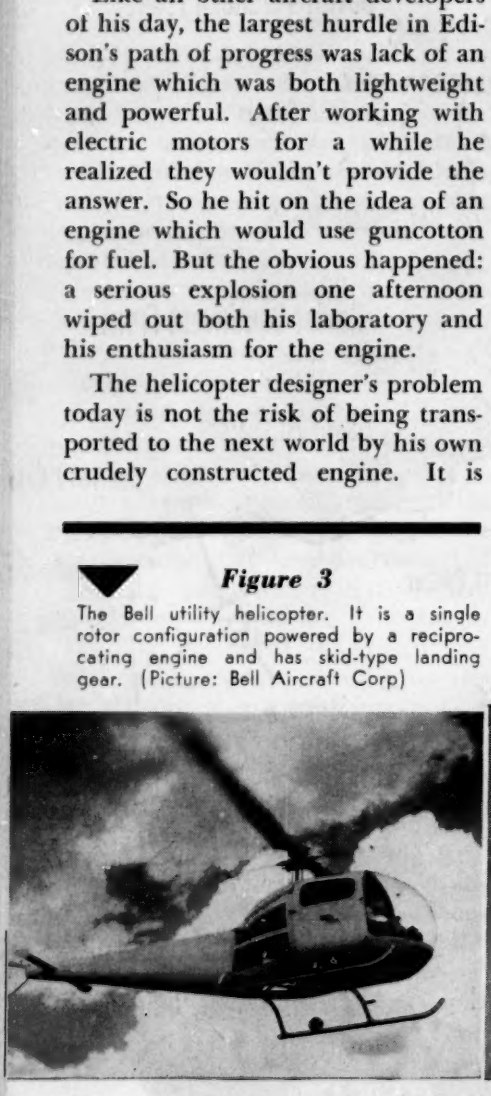


Figure 3

The Bell utility helicopter. It is a single rotor configuration powered by a reciprocating engine and has skid-type landing gear. (Picture: Bell Aircraft Corp)

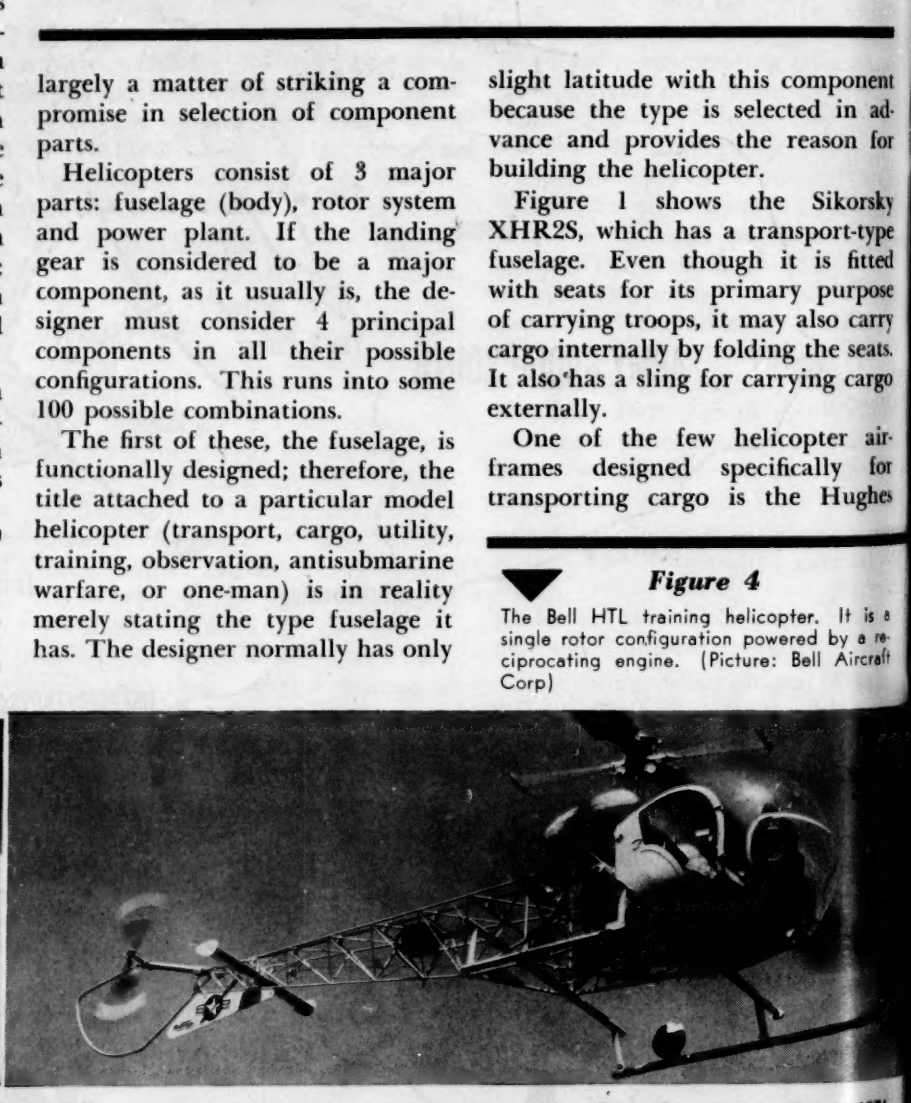
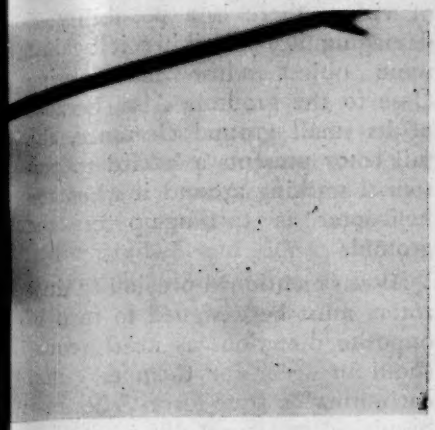


Figure 4

The Bell HTL training helicopter. It is a single rotor configuration powered by a reciprocating engine. (Picture: Bell Aircraft Corp)

OPTER FAMILY



Flying Crane shown in Figure 2. As you can see, its fuselage consists of just enough framework to accommodate the rotor system, power plant and pilot compartment, and is built along the general lines of a lumber truck to facilitate external cargo carriage. The weight-saving inherent in such a skeletonized design is reflected in its liberal allowable payload/gross weight ratio.

The Bell HUL in Figure 3 incorporates a utility-type fuselage. This might be considered a typical utility helicopter in that it carries from 1 to 4 passengers in addition to the pilot. Their principal use in the armed forces is liaison work such as messenger service, casualty evacuation, wire laying and transportation of small numbers of personnel.

Figure 4 is a picture of the Bell HTL, which is used for pilot training. Simplicity of design throughout is the keynote of this machine. Not only does this facilitate easy maintenance, it permits low cost construction (as helicopters go), both of which are desirable in any training aircraft.

The Kaman HOK shown in Figure 5 has an observation-type fuselage. As the name implies, this helicopter was designed for aerial reconnaissance work.

The Bell HSL in Figure 6 is an antisubmarine warfare (ASW) helicopter, designed specifically for detecting submarines by sonar. It also has provisions for dropping depth charges on detected targets. The fuselage is designed around the submarine-fighting equipment.

The last fuselage type is the one-man, one of which is shown in Figure 7. This particular helicopter, named the Rotor-Craft Pinwheel, has practically no fuselage at all The name "one-man" indicates its intended use: providing transportation for one person.

When designating helicopter models, the Navy and Marine Corps take into consideration fuselage type. Their helicopter model designation system is as follows: The first letter, which is always "H" indicates that it is a helicopter; the second letter shows its basic function (S – antisubmarine, C – cargo, R – transport, T – training, O – observation, and U – utility); and the third letter is the manufacturer's letter (E – Cessna and Hiller, H – McDonnell, K – Kaman, L – Bell, P – Vertol [formerly Piasecki] and S – Sikorsky). A number following the letters is the modification number.

Figure 6

The Bell HSL antisubmarine warfare helicopter. It is a tandem rotor configuration powered by a reciprocating engine and has 4-wheel-type landing gear. (Picture: Bell Aircraft Corp)

Figure 7

The Rotor-Craft Pinwheel one-man helicopter. It is a single rotor configuration powered by rocket motors on the rotor tips and uses a single skid landing gear. (Picture: Rotor-Craft Corp)

Figure 5

The Kaman HOK observation helicopter. It is a "Synchropter" type rotor configuration powered by a reciprocating engine. (Picture: Kaman Aircraft Corp)

The Navy and Marine helicopter model designation system may be demonstrated with the HTL6 helicopter. It is a helicopter (letter H), to be used for training (letter T), built by Bell (letter L), and six different modification models have been turned out (number 6).

The Air Force and Army designate their helicopters in a slightly different way. Like the Navy and Marine system, the first letter is always "H" and for the same reason. However, this is followed by a number to designate the lineal position of the helicopter (i.e. The first helicopter built for the Army or Air

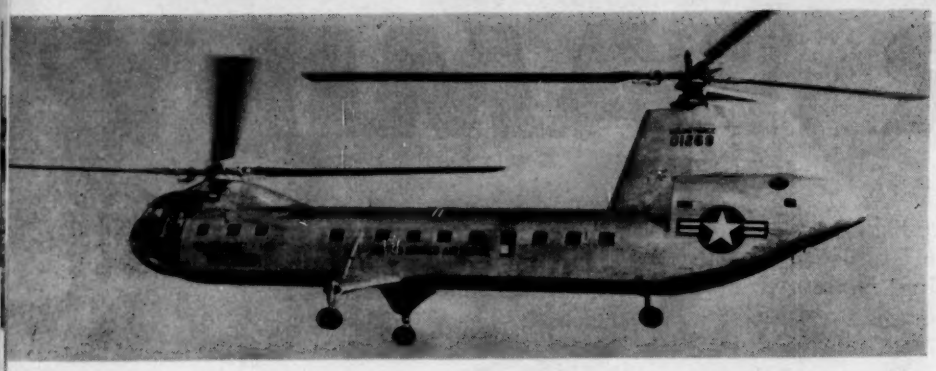


Figure 8

The Vertol H16 transport helicopter. It is a tandem rotor configuration powered by dual reciprocating engines and has 3-wheel-type landing gear. (Picture: Vertol Aircraft Corp)

Force would be the H1, and if 30 models have been built the latest one would be the H30). Then, instead of using a number to designate modification, a letter is used in alphabetical order.

The HTL6 in the Army and Air Force is the H13G. It is a helicopter (letter H), 13th model built for them (number 13), and has been modified 7 times (letter G).

Moving now from the fuselage and basic helicopter function, the rotor system will be considered. This, of course, is the item that sets the helicopter apart from other aircraft so some thought should be given to how it works.

In order to be suspended in space, any heavier-than-air aircraft must receive "lift" from some sort of airfoil. In the case of fixed-wing aircraft, sufficient airflow over the airfoil (wing) to permit aerial flight is induced by pulling it through the air with a propeller. Since the wing is attached rigidly to the fuselage, both must move through the air at the same rate of speed.

On the other hand, the helicopter's airfoil is called the rotor. Rotor blades are actually elongated wings both in aerodynamic shape and characteristics. However, instead of being pulled through the air to cause airflow, rotor blades are rotated horizontally on a shaft. This creates forward flight of the airfoil—even though the flight path is in the form of a circle—while the fuselage remains motionless over a spot on the ground. This gives the helicopter vertical flight capability.

In selecting a suitable rotor system, the designer is confronted with the problem of "torque force" acting on the fuselage. Sir Isaac Newton, in his Third Law of Motion, advised us that for every action we could expect an opposite and equal reaction. That simply means in this case that when the rotor-turning force (engine) is mounted in the fuselage, the fuselage will tend to recoil or turn in the opposite direction. This turning tendency can be arrested by 1) providing an antitorque tail rotor to compensate for a single main rotor; 2) installing twin contra-rotating main rotors to cancel the effects of each other; or 3) applying propulsion at the rotor tip instead of the rotor shaft. The last of these considerations is more appropriately a matter of power plant selection, however, and will be considered along with that component.

The helicopter in Figure 1, the Sikorsky XHR2S, has a single main rotor system incorporating an antitorque tail rotor. This tail rotor, for all practical purposes, is a propeller which pulls opposite to the direction of main (lifting) rotor travel and provides directional control for the fuselage. The antitorque rotor, incidentally, has absolutely nothing to do with forward momentum of the helicopter.

This single rotor-type system is by far the most widely used at this time. Its principal advantage is its relative mechanical simplicity and light weight. Its foremost disadvantage is that the antitorque rotor absorbs about 8 to 10 per cent of available engine power while hovering. The antitorque rotor arrangement has another definite disadvantage. Since it is located some distance behind the pilot and outside his field of vision, there is a possibility of damaging it by striking it against some object while maneuvering close to the ground. Also, because of its small ground clearance, the tail rotor presents a hazard to personnel walking around it when the helicopter is turning-up on the ground.

As was mentioned previously, dual rotors must be designed to turn in opposite directions as nearly equal speed in order for them to cancel each other's torque force. They may be placed in several different dispositions in relation to each other.

The Vertol H16 in Figure 8 has a tandem-type dual rotor system, meaning that the two rotors are mounted fore and aft on the fuselage. The chief advantage of this configuration is that payload may be distributed over a large cabin deck area and still keep the center-of-gravity in safe limits. In simple terms, it is the same principle as hanging a painters' scaffold on two ropes instead of one.

The tandem rotor design has the disadvantages of having rather long overall dimensions, a complex arrangement of gearing and shafting, and reduced overall efficiency because the rear rotor operates in the turbulent wake of the forward rotor.

Another way to mount dual rotors on a helicopter is with a side-by-side arrangement as demonstrated by the McDonnell XHJD in Figure 9. This type rotor disposition has the advantage over the tandem-type by

Figure 9

The McDonnell XHJD utility helicopter. It is a side-by-side rotor configuration powered by dual reciprocating engines and has 3-wheel-type landing gear. (Picture: McDonnell Aircraft Corp)

having neither rotor riding in the wake of the other. On the other hand, it does not have the larger center-of-gravity range inherent in the tandem design.

The third way to mount dual rotors is by superimposing one above the other like the Gyrodyne (GCA 2C) shown in Figure 10. The advantages of this system, called a coaxial rotor system, are that the overall dimensions are no greater than a single rotor type, yet power need not be diverted to an antitorque rotor. It has the same disadvantage found in the tandem and side-by-side arrangement, however, of requiring complex shafts and gears.

Figure 10

The Gyrodyne GCA2C utility helicopter. It is a coaxial rotor configuration powered by a reciprocating engine and has 3-wheel-type landing gear. (Picture: Gyrodyne Corp)

The last dual type rotor system is the intermeshing or "synchropter" design similar to the one displayed on the Kaman HOK in Figure 5. This rotor system is more compact than the tandem or side-by-side arrangement, but less compact than the coaxial. It has more exposed blade area than the coaxial, but less effective lifting area than the tandem or side-by-side system (the blade area that overlaps has single lift value instead of double).

The fact that all of the above rotor systems are either being built at this time or under consideration is sufficient proof that none has been shown to be *overwhelmingly* superior to the others. With rotor systems it is still a case of, "Pay your money and take your pick."

So much for the rotor system. What about power to drive it?

Maj A. J. Clapp received his wings in 1943. During WWII he flew fighters from the USS Salerno with Task Force 58. Prior to the Korean conflict he was a flight instructor at the NAS, Jacksonville, Fla. Leaving Jacksonville he was attached to a jet fighter squadron at Cherry Point, and then served with HMX-1 at Quantico. He flew with HMR-161 in Korea, and later was Operations Officer of VMO-1 in Korea. Maj Clapp is currently assigned to the Air Section of Development Center, Quantico.

As was noted before, rotors can be turned by: turning the rotor shaft through a gear arrangement from the engine or; applying propulsion directly to the rotor tips.

After deciding which of these methods he will use, the design engineer must determine which of the following will best meet his needs: reciprocating engine, shaft turbine engine, pressure jet engine, ram jet engine, pulse jet engine, or rocket motors.

Just as the single rotor configuration is the most widely used at the present time, the most common power plant installation is a reciprocating engine coupled to a shaft-turning transmission. This is probably because it is the only known *efficient* way to use a reciprocating engine in a helicopter, and this type engine is more plentiful, hence more knowledge is available on it than the others. Even though the weight penalty for this installation is greater than for the others, it offers maximum economy from the standpoint of fuel consumption. And it presents no particular problem in the handling of special-type fuel required with some of the other engines.

Shaft turbines have also been coupled successfully with a transmission to provide power for helicopters. One such helicopter, the Sikorsky XH39 shown in Figure 11, recently broke the world helicopter speed record by flying 156 miles per hour. A shaft turbine weighs approximately half as much as a reciprocating engine having comparable horsepower, but it consumes fuel at a much faster rate. Again, providing fuel for these engines poses no particular problem as they can use just about any combustible liquid.

There is no practical way to drive a rotor shaft with any of the other power plants mentioned above, so if the rotor is to be shaft-driven, the choice narrows down to shaft turbine versus reciprocating engine. In comparing the two types of engines, let's assume a particular helicopter requires a 1,000-horsepower engine, and it is anticipated that missions for it will average 2 hours in duration. Considering the engine and fuel as a composite to arrive at aggregate weight that must be carried for performance of comparable work, two representative power plants compare roughly as follows:

	Shaft turbine	Reciprocating engine
Engine weight	450 lbs	1,000 lbs
Fuel consumed (2 hrs)	1,700 lbs	1,150 lbs
Aggregate weight	2,150 lbs	2,150 lbs

As you can see, the decision in this case could be made with the flip of a coin. But if the expected flight duration were decreased appreciably, the shaft turbine would excel; conversely, increased flight duration would favor the reciprocating engine.

Figure 11

The Sikorsky XH39 utility helicopter. It is a single rotor configuration powered by a shaft turbine engine and has retractable 4-wheel-type landing gear. (Picture: Sikorsky Aircraft Corp)

Figure 12

The Hiller Hornet utility helicopter. It is a single rotor configuration powered by ram jets on the rotor tips and has skid type landing gear. (Picture: Hiller Helicopter Corp)

As was mentioned previously, there is still another way to drive a rotor besides turning the shaft: propulsion force applied at the rotor tip. One of the primary advantages of utilizing this principle is that the torque problem is eliminated.

If rotor-turning force is applied directly to the trailing edge of the rotor blade tip, no mechanical linkage (transmission) is required between rotor and fuselage. Therefore there is no way for torque to act on the fuselage so there is no requirement for an antitorque rotor.

One way to provide propulsion at the rotor tips is by driving an air compressor with an engine and ducting compressed air from it through the rotor hub and blades to the blade tips. There the air is mixed with fuel and ignited, thereby providing the necessary thrust to turn the blade. This is called a pressure-jet power plant. Because of weight-saving possibilities, the shaft turbine appears to be more efficient than the reciprocating engine for this application. The Hughes Flying Crane in Figure 2 uses this principle for driving the rotor.

The other way to turn a rotor with force exerted at the rotor tip is by installing some type of jet engine or rocket motor on the ends of the blades. The rocket motor installation will be considered first.

Rocket motors have a number of advantages. Among these are: 1) they are extremely light and small in size; 2) they have no moving parts; 3) they require no oxygen from the atmosphere for operation; 4) they normally require no ignition of the fuel; 5) they are relatively inexpensive. On the other side of the ledger, however, they require special fuel and have a very rapid rate of fuel consumption. The most common rocket fuel, hydrogen peroxide, is almost twice as heavy as gasoline and costs about 30 times as much.

Because of their high fuel consumption rate, rocket motors do not appear to be practical power plants for other than extremely small, short flight duration helicopters like the Pinwheel in Figure 7.

The next rotor-tip-mounted propulsion unit to be considered is the ram jet. The Hiller Hornet in Figure 12 is powered with ram jet engines on the rotor tips. As with the rocket powered principle, this type of engine does not appear feasible for other than the smallest types of helicopters. Ram jets have no moving parts, they are relatively inexpensive, and are light and simple in construction. They can use any combustible liquid for fuel; and even though their rate of fuel consumption is less than that of rocket motors, it is higher than any other power plant under consideration. Unlike rocket motors, they require oxygen from the outside atmosphere in order to operate and they are larger in size and weight than rocket motors. Ram jets must be pushed through the air at considerable speed with some external power source to get "ram" air before they will start. This is because they are incapable of delivering static thrust to get them moving through the air on their own.

The last rotor-tip-mounted power plant that will be considered is the pulse jet. The pulse jet is reliable, has low maintenance cost, is relatively inexpensive to construct, and unlike the ram jet it is capable of delivering static thrust so it needs no external power source to get it up to speed.

Among the pulse jet's disadvantages are the following points: It delivers power spasmodically causing rotor blade vibration, it has a moderately high rate of fuel consumption, it cannot be restarted while in motion, and it is extremely noisy in operation.

Now that the various rotor-tip-mounted power plants have been examined individually, they will be compared with each other. These are approximate characteristics only and do not necessarily represent specific engines.

The aggregate weight of representative rotor-tip-mounted propulsion units with an adequate amount of fuel to provide 1,000 horsepower to a helicopter rotor system for a 2-hour duration flight compare roughly as follows:

Power Plant	Engine Weight	Fuel Weight	Aggregate Weight
Pressure jet	450 lbs	3,200 lbs	3,650 lbs
Pulse jet	330 lbs	4,500 lbs	4,830 lbs
Ram jet	280 lbs	14,000 lbs	14,280 lbs
Rocket	100 lbs	40,000 lbs	40,100 lbs

The above table is presented in order to provide a comparison between the previously described shaft-driving power plants and various rotor-tip-mounted power plants. Some of the latter type units require more fuel than they can possibly lift, so they are obviously unsatisfactory for this horsepower and flight duration range. They could be used for lighter weight helicopters and shorter durations, however, so the table (next page) is presented for the purpose of comparing various power plants which are to deliver 250 horsepower for 30-minute flights. This is more realistic for currently designed tip-mounted units.

When power plants are mounted on rotor tips there is no requirement for drive shafts and gears or torque counteracting devices. Therefore, there is a substantial weight-saving and all available power is directed toward driving the main rotor. An appraisal of the entire helicopter is necessary, therefore, before any conclusions can be reached as to the

Power Plant Type	Engine Weight	Fuel Weight	Aggregate Weight
Shaft turbine	112 lbs	106 lbs	218 lbs
Pressure jet	112 lbs	200 lbs	312 lbs
Reciprocating	250 lbs	72 lbs	322 lbs
Pulse jet	82 lbs	750 lbs	832 lbs
Ram jet	70 lbs	875 lbs	945 lbs
Rocket	25 lbs	2,500 lbs	2,525 lbs

It is important to note that this is a comparison of power plants only.

most efficient power plant for a particular job.

The last major component of the helicopter that will be considered is the landing gear. Again, there is a wide variety from which to choose.

The gear can consist of 3 wheels similar to those installed on the XHR2S in Figure 1.

Four-wheel landing gear is another type in use on such helicopters as the Bell HTL in Figure 4.

Skids are sometimes used when landings in rugged terrain are anticipated. An example of this type gear can be seen on the Bell HUL in Figure 3. Skids can also be made ski-shaped for use on ice and snow.

Flotation gear is normally designed to be installed in conjunction with one of the other types listed above. The Sikorsky HRS in Figure 13 is equipped with this type gear, and is interchangeable with its normally-installed wheel gear.

Retractable landing gear is beginning to gain favor in the helicopter field. The Sikorsky XH39 in Figure 11 is equipped with this type gear. The resulting "drag" reduction aided this helicopter in its establishment of the world speed record.

That is the spectrum of helicopter components which, when assembled, comprise the helicopter family. In building a complete helicopter, the components can be put together in a wide variety of combinations that will result in neither an entirely "good" nor emphatically "bad" machine. For even though a certain combination may be better suited than the rest for a particular function, it may be a total failure at other tasks.

So the only way a helicopter should be compared with other helicopters is in light of the work it is expected to accomplish. There is no other basis for an honest appraisal of relative value. USMC

Figure 13

The Sikorsky HRS transport helicopter. It is a single rotor configuration powered by a single configuration powered by a reciprocating engine and has float-type landing gear. (Picture: Sikorsky Aircraft Corp)

★ ★ ★ ★

The Skipper Went Asiatic for Sure

In the days before WW II when the US gunboats of the Asiatic Squadron plied the Whangpoo and Yangste Kiang, there was one skipper who was odd for holding collision drill. Half-a-dozen times a day the signal would be given and, from his vantage point on the bridge, the eagle-eyed skipper would watch the damage-control party dash about doing their damage controlling (simulated).

One member of the party, an old carpenter's mate, became very unhappy with his duties. His T/E weapon was a 16-pound sledgehammer. Dashing around ship, up and down ladders with a 16-pound sledge, added to the load he had taken aboard the night before, didn't fit into his program at all.

Thus it was that one day in his carpenter's shop he fashioned a replica of the hammer. He made it of balsa wood and painted it carefully to resemble the original. Thereafter he waltzed through the drill carrying his feather-weight sledge.

All went well a few days and then one day, after the alarm sounded, as the party raced round a tight corner going forward the carpenter's mate lost his balance. As he reeled, he struck the rail and lost his grip on the sledge. It catapulted over the side.

Up on the bridge the skipper watched with bulging eyes at what he though was a 16-pound sledge settle lightly in the Whangpoo and float gracefully past the bridge, then bob out of sight far astern in the wake of the ship.

The skipper didn't last long after that.

CWO F. T. Stolley

A Bird on the Grass, Alas!

The DI we had for our summer training program in the PLCs was unhappy with our "fall-out-of-ranks-fall-in-beside-your-bunks" performance. Naturally with the sergeant unhappy we were unhappy, but his goal of less than one minute for the entire operation was difficult to achieve, especially in view of his admonition . . . "Keep off the grass on the way in."

On our tenth practice run, however, we got a break. Diehardt, one of the candidates, who was leading the pack tripped on the curb and went sprawling on the grass. The 44 frantic candidates who followed, immediately took advantage of the situation charging right over him into the barracks.

We were all lined up at our bunks still breathing hard, but well under the minute mark, when we heard the sergeant's stentorian voice boom out.

"Diehardt . . . I thought I told you to keep off that --- ---- grass!"

2dLt J. J. Piermatteo

(The GAZETTE *will pay $10.00 for each anecdote published. Submissions should be short and pointed.)*

the observation post

IT'S EASY TO SAY BUT—

ANNAPOLIS, MD.—"It's easy to say, but doggoned hard to put this physical conditioning into practice." Those familiar words are ringing again as a result of LtCol R. E. Carey's excellent article in the April GAZETTE. "It's easy to say, but," has been the time honored reason for our not being in condition and it is being said again. Many men, more qualified than I, have told us *why* we should be in good physical condition. I would like to give some ways of removing that "but." Yes, all of us can get into shape and stay there. There is no reason why a man should be short of wind and out of strength simply because he's a motor transport man or a clerk-typist.

Before we attack this problem, we must realize that the phrase "good physical condition" is incomplete. There are at least 2 major factors that tell us how far a man can march in what length of time. A good strong body alone is not enough to keep a man alert and able to attack when the day has been long and hard. Our battalion surgeon used to tell me that we have Marines with both strong and weak wills just as we have them with strong and weak bodies. A Marine with a strong body but a weak will won't be able to go any farther, if as far, as one with a weak body and a will strong enough to push him when he's tired. It is the strength of a man's will that makes him take that next step when he thought the last would be all he could take. For the most part, the young Marines and some of the old ones have never *had* to take the next step. In their formative years, they generally quit playing when they were tired and didn't learn that the next step is possible. Actually, most straggling is caused by men afraid to push themselves that necessary step. They haven't learned that they can do it.

We must attack this problem of conditioning from two angles simultaneously. First, we must have ourselves physically fit and second, we must be mentally able to force ourselves forward when the going is tough. Marines need both a strong body and a strong will to keep winning.

Let's look into this problem of exercise first. The time element is the big stumbling block here. We all have been in organizations that attempt to achieve physical fitness by an afternoon a week devoted to organized athletics or perhaps a weekly conditioning march. You don't achieve true physical fitness by spasmodic efforts such as these. Both hiking and athletics leave most men bruised and sore for days afterwards. Besides, how many people take part in these programs? Our physical program must be a continuous thing that takes place every day and has room for expansion. How do we find time every day for a physical conditioning program that will truly get us into shape? What can we do in a short period of time to get us in condition? The answer is to run. Fall your unit in by platoons, give them a route to run and lead them around. One half an hour daily devoted to double-timing around the area will get you and your men into condition and keep you there.

Most unit working hours are concluded at 1630. Knock off work promptly at 1600, and fall in ready to go in utilities at 1610. The last half hour of the working day should be the time for your PT. This time is better than the morning for several reasons: the officers and Staff NCOs are more readily available for participation and the men have completed their day's work.

The rifle companies and gun batteries will have no problem in setting such a schedule. It is the headquarters and service outfits that will have the trouble. These units must ruthlessly close their doors and typewriters for the physical training. Truck drivers out on a trip when the running begins don't get to leave the truck park to get cleaned up until the runners have showered and dressed. This program can be accomplished with little loss in work output.

When you decide to start running yourselves into shape, start easily and keep the pace slow, choosing a man of medium height for your guide. Alternate running with walking for your exercise period. Start by running 2 minutes for every minute you walk during the half hour and build it up to at least a solid 20-minute run eventually. Be sure you walk for at least 2 minutes before you secure because it will help keep leg muscles from tying into knots.

All units should run their half hour daily. Combat units should run everywhere except to evening meal. Wherever and whenever a rifle or weapons company, or any portion thereof, goes anywhere in ranks they should run. The battalion police sergeant gets his working parties on the double. Why not double time to breakfast and lunch in garrison? Is there any reason why the runner shouldn't run? Fighting units must be composed of strong bodies—running can make them strong.

We now come to the weak wills that must be strengthened (along with the weak bodies). The will to go forward is essential to every Marine. Almost all of them have this will if we can help them find it.

I went through the Army paratrooper school at Fort Benning, Georgia, with 2 other Marines. We were surrounded by Army and Air Force officers and were on our mettle to do well in all respects. One of our number hadn't done any exercising for more years than he could remember and he had a very difficult time when we started to run. But he would be damned before he would disgrace the Globe and Anchor by falling out of ranks. He didn't have enough wind to keep himself going, much less to count cadence. This Marine pilot got through that course on guts and the Marine's Hymn. He had the kind of will that we must develop in ourselves and our men.

This story shows us one of the ways we can go about developing this will. The history of our Corps is a glorious story and it can bear much repeating. The breaks in conditioning hikes provide an excellent opportunity for the Skipper to get up and tell his men another story about the past of the Corps. Our history is rich in interesting stories to point up the moral that *Marines* don't quit when the going gets tough. Giving your men pride in themselves as Marines is the first step in showing them that they have the will to go forward.

Pride in the Marine Corps will give the men a mental reason for keeping up. Give them a physical reason also. When you take your break, stop the stragglers and have them do 10 push-ups right there on the spot to remind them that a Marine can will himself forward.

Foreign countries have found that singing helps their men march. There is nothing like a good marching song to make the next step easier. It is a good idea if you can get it started.

Here is a program for physical-mental conditioning that can be followed by all units. We can develop a man's body by an easily spared half hour a day

spent in running 2, 3, 4, or more miles a day. At the same time, we can develop his will to go forward by showing him why he must and can will himself onward.

This program can pay big dividends in a healthier, and prouder Corps that is truly fit to fight. "It is easy to say, *and it can be done.*"

Capt R. G. Hunt, Jr.

POTPOURRI ON REQUALIFICATION

QUANTICO, VA.—It always seems that the wind starts blowing before the butt detail gets back to fire. Let's give them a chance to fire before the wind starts. A few days to speed up the first series of firing relays include the following:

1) Upon the completion of firing take your rifle to the cleaning rack and clean it. The belief that taking your weapon down will change the dope is just a lazy man's excuse for not cleaning his weapon. However, I don't recommend taking the rear sight down. When you are ready to put the piece together put lubriplate on the parts requiring it. This will eliminate having to stop the next morning to lubriplate your weapon. It also makes for easier dry firing during the afternoon.

2) After picking up your ammunition put it in your cartridge belt while you are walking from the ammunition shed to the firing line. Put 10 rounds for the 200 yard slow fire in one pocket of the belt and retain the empty clip for the 200 yard rapid fire.

3) Enter the next day's "dope" in your scorebook after you have finished firing.

4) On returning to billets assemble your gear in one convenient place so you won't have to stop and look for it the following morning.

Odds and ends that might help increase your score:

1) Blacken your sights before you depart from the 200 yard line. The sights should still be black enough when you leave the 300 yard line to present a distinct sight picture when you get to the 500 yard line.

2) If you find your eyes blurring during slow fire take the piece out of your shoulder and look away from the target.

3) Try using your rapid-fire squeeze during the off hand slow fire. The longer you hold the weapon in your shoulder the harder it is to get a steady sight picture.

Odds and ends for the range detachment:

1) Make sure all smudge pots are working properly. If one or two of the pots go out it causes a delay in getting the relays on the firing line.

2) Keep the washrooms well supplied with paper towels and grease removing soap.

3) Have the ammunition ready for issue to keep shooters from waiting in line for it. Might have ammunition issued to the butt detail while they are still in the butts. This would enable the butt detail to commence firing as soon as they get to the firing line.

4) Keep the phones from the firing line to the butts in proper working order. Trying to funnel all calls from a 50 point firing line through one phone really slows things up.

5) Keep sufficient bore cleaner, oil, patches and lubriplate on the cleaning racks.

6) See about having either steps over the butts or a tunnel under the butts constructed to save time moving the details around and into the butts.

After record day:

1) If you get enough of them in the black, check with the range office and submit your score for consideration in the current marksmanship contest.

2) If you've gotten enough of them in the black to fire expert for the third time, stop by the company office and put in your request for the expert bar. Above all—Hold 'em and squeeze 'em!

TSgt R. J. Southall

GUEST NIGHT

AMPHIBIOUS WARFARE CENTER, FREMINGTON, ENGLAND—Read with much interest Col Benge's comments on the *Night-In-Mess* as conducted by the 9th Marines on Okinawa. It differs somewhat from the monthly *Guest Night* conducted here. This is as it should be, for once the routine for a *Mess Night* is laid down in hard and fast regulations it will no longer be any fun. In the British services it is conducted according to regimental custom and differs from regiment to regiment.

The Mess here is an interservice Mess with officers from the Royal Navy, Army, RAF, Royal Marines and Commonwealth nations represented. Hence, the customs practiced at *Guest Night* are an amalgamation of those practiced by all the British services.

Several differences worth noting from the 9th Marines and the excellent procedure laid down by Col Williams in his *Mess Night* article (Dec. '55) are:

a) Entering dining room: The senior officer together with the most distinguished guest leads the procession into the dining room. Other guests accompanied by officers follow immediately behind without regard to rank. Seating arrangements for certain key individuals i.e., President, Vice President, Senior Officer present and guests, are all indicated on a chart displayed in the drinking room.

b) Smoking: No smoking is permitted once you have taken your place at the table. You may never begin smoking until after the Royal Toast has been drunk. Even then you wait until the President raps his gavel and says, "Gentlemen, you may smoke."

c) Toasting: Here, any foreign guests present are acknowledged by the President offering a toast to the sovereign concerned. For example, since I am usually the only "foreigner" here, the President raps his gavel, rises, and proposes the first toast by saying: "Gentlemen, the President of the United States." All repeat, "The President," and drink. After a few minutes pause, the President again raps his gavel, and looking at me, he says my name. I rise and say, "Gentlemen, Her Majesty the Queen." Here the Royal Toast (the one to the Queen) is always drunk last. But in some messes it is drunk first. In one mess it is drunk sitting down.

d) Leaving the table: Once seated you cannot leave the table until the senior man rises to leave. During dinner no one leaves the table unless excused by the President. A head run is not an acceptable excuse. In some messes this sometimes causes anguished diners to try to sneak out by crawling under the table. While so doing he is fair game for kicks.

e) Departing: The local rule demands that no officer leave until after the guests have departed. If one of the guests is a particularly late stayer (invariably a company grade officer) he should be considerate enough to "officially" leave and then return 5 or 10 minutes later. This gives the older "boys" an opportunity to graciously take their leave.

No matter what you call it, or where it is held, I think all of us who have attended one will agree the necessary ingredients for a good *Mess Night* are: best available uniform, good food and wines, guests preferably interesting ones, toasts, followed by singing and/or games. If your outfit hasn't had one, why not try it? You'll be agreeably surprised.

LtCol L. E. Hudgins, Jr.

BOOT RECRUITERS

CAMP LEJEUNE, NC—Gone are the days when a lad had to wait for the next month's quota or travel to another recruiting district to become a Leatherneck. The Recruiting Division of the Marine Corps delves into every element of human nature in its attempt to sell the Corps as a career to qualified young

men. The colorful history and traditions of the Corps are exemplified through every manner of modern advertising. We sell the good pay, free insurance, retirement and other fringe benefits, but the Corps' impeccable record sells itself. Our story is well told by MajGen R. M. Ridgely, Jr. commanding the 2d Mar Div who recently said, "If you are a leader of men, the Marine Corps needs you. Our readiness to fight and our efficiency in combat depend upon effective, aggressive leadership. In camp as in combat we need trained leaders. In return the Corps offers you an honorable and interesting career in the world's proudest fighting organization." This is the Marine Corps — the big reason 99 percent of our members enlisted.

Each new recruit is trained to be a leader. If during his 3 year enlistment he has the making of a leader, we need him. Therein lies our big problem, re-enlisting the men who are qualified as future leaders of the Corps.

The enlistment program appears to be keeping up with its quotas, however, the re-enlistment program can always stand a shot in the arm. Theoretically, of course, the enlistment program should take care of all normal attrition, but the percentage of first cruise Marines who do not extend or ship over is abnormal. Re-enlistments are the backbone of any voluntary military organization and every Marine looks with disfavor upon an induction program. We must convince a greater percentage of qualified men to accept the Marine Corps as a career.

Every Marine comes into contact with the never-ending drive for re-enlistment, be he career or first cruise recruit. Bulletins, posters, pamphlets, stickers, lectures and interviews are only a few of the media used. Here in our re-enlistment program is where we are "missing the boat." Recruiting-wise we've touched upon it. We've offered a 5-day leave or extension thereof to lads who can enlist a civilian friend. This inducement has made recruiters of many Marines but a check of the records will disclose an interesting fact. The majority of these boys doing the recruiting are on their first cruise. The second cruise man or career man hasn't lost his old fire or esprit de corps, but his trip back to the old hometown usually leaves him cold. Friends are scattered, well established as civilians or belong to another branch of the service. Recruiting his friends is a problem. Of course, the younger set are eager to listen, but skeptical. The most outspoken Marine is the first cruise enlistee and a proven recruiter.

From the day they hit Boot Camp Marines talk about what they are going to do when they've "served their time." Never do they talk about their next cruise unless it's in jest. Then after 2½ years of this convincing barracks palaver Mr. First Cruise Marine is interviewed regarding his second cruise. Undoubtedly some of this career talk is absorbed, but back in the barracks the boys get their "kicks" out of the interviews. If Bill or Joe is convinced to ship, he can't—he'd lose face with the boys in the barracks. Besides he has 90 days to think it over.

Now let's take a look at these same first cruise Marines when they're home on leave or liberty. These "Gum-beaters" are also the fellows you'll find strutting their stuff, defending the Corps and its traditions to the *n*th degree at the mere drop of a hat. Here we have the best recruiter in the world. Let's put this live-wire to work recruiting and *re-enlisting*. We have to indoctrinate the first cruise Marine on the benefits of the Corps as a career earlier in the game. A basic training course in recruiting should start in Boot Camp, not 6 months before enlistments expire. Let the recruit start preaching the gospel. Today's youth may be taken in by the colorful dress blues and campaign ribbons, but stories as related by a lad his age will be accepted with less skepticism.

Train the new recruit to be a leader but give him a more complete knowledge of the history of the Corps, its traditions and facts and figures on why it's an interesting career, then turn him loose on his buddies. The recruit should be thoroughly inculcated with the knowledge that his devotion to his country and the Corps does not end with "serving his time." We sell the "Recruiting a buddy" Program, and it works. Then why not a re-enlistment program of the same nature? First, however, let's start a career education program in basic training.

Capt R. W. Crook

TIME TO SPARE? GO BY GOVERNMENT AIR

CAMP LEJEUNE, NC — Have you made a trip by government air lately? If you haven't, and you plan to make one — especially if the trip is under 500 miles — I have some excellent advice for you. I can write about this mode of travel with considerable authority as it has been my misfortune to have logged a great number of trips by government air during the past 10 years.

As an old seasoned traveler through the air lanes, I feel that you are entitled to know the true facts about air transportation. I refer principally to government airplanes, and I do not single out any branch of the service as a horrible example. I have travelled on airplanes of each branch of the service and they are all equally qualified as "horrible examples."

On my last trip from Camp Lejeune to Washington by government air, we got aboard a transport plane at Peterfield Point at 0830. We had to wear our uniforms and over the uniforms we had to wear our parachutes. The weather was hot and before we were airborne all of us were soaked with perspiration. After we were in the air a few minutes our radio failed and we had to make an emergency landing at Edenton. We passengers milled about the little operations building for about 4 hours while the crew tried to get the radio repaired. Finally, a relief airplane came in to finish the trip. This plane cracked a tail wheel upon landing and there was another long wait while tail wheels were exchanged. Eventually, a short time after dark we landed at Norfolk. There was another long wait there, and finally at about 2100 one of the crew informed his herd of bewildered passengers that Washington was weathered-in and that we would not continue the flight until next day. He then disappeared to where crew members go under such circumstances, leaving the passengers to shift for themselves. We were informed that there were: 1) No quarters on the station for us; 2) there was no place on the station open where we might get some food; 3) there were no government cars or trucks available to us, and 4) that taxicabs were not allowed on the station to pick up fares. After a comfortless night on the floor of the operations building, we finally left and arrived at Washington shortly before noon. All of us looked as if we had ridden the rails for 2 weeks.

Perhaps some of you have had better luck with government air. I try to be broad-minded about such things, but for my part the trip I have just described is typical. One trip I remember was from El Toro to Cherry Point. This took 10 days! Another one was from Tokyo to San Francisco. I was jubilant about this opportunity to come by air. A son I had never seen, who had been born after I went to Korea, was one of the reasons I was so happy to get to make the trip home by air. I bade the others in my draft who were designated to return by ship a bantering farewell. They went aboard ship at Yokohama and I went to the airfield—5 days later I left Tokyo; enroute to Honolulu we had an engine to go out. We were at Wake Island 2 days. At Honolulu I had another wait of 4 days.

When I arrived at San Francisco the passengers who had returned to the United States by ship had already been processed and were home.

I don't want to be misunderstood. I am not an old moss-back who is unable to grow and change with the times. I believe the airplane is here to stay, alright. Furthermore, I believe that possibly in our day that our government will have airplanes for transporting passengers that are as reliable as the 6x6 truck, and at least as fast as a ship. I also believe that in the next few years our air fields will have accommodations for stranded passengers, and yes, even though this may seem a bit radical, our passenger waiting rooms at air fields may have seats and a snack bar. There also might come a time when pilots and crewmen are not so reticent about departure times. I realize that now they usually do not know, and the reticent act is probably to cover up their lack of knowledge. However, the fact remains that as far as I am concerned the airplane rates at the very bottom of the list of modern transport.

From my wide experience in riding government airplanes, I have gained some know-how that might possibly be of help to any of you who dope off and get stuck with travel via such a conveyance. I suggest that you go prepared. Take along a canvas folding chair; a few good books; a sleeping bag; a canteen of water for those of you who use the stuff, and a carton of "C" rations if you can get next to an officer who is charged with their custody. Adopt a languishing attitude of worldly boredom (this marks you as the seasoned traveler by government air), and develop a philosophy of don't give a damn when we arrive or when we leave. You won't be able to find out anyway.

My main point is, of course, try not to be trapped into going by government air in the first place.

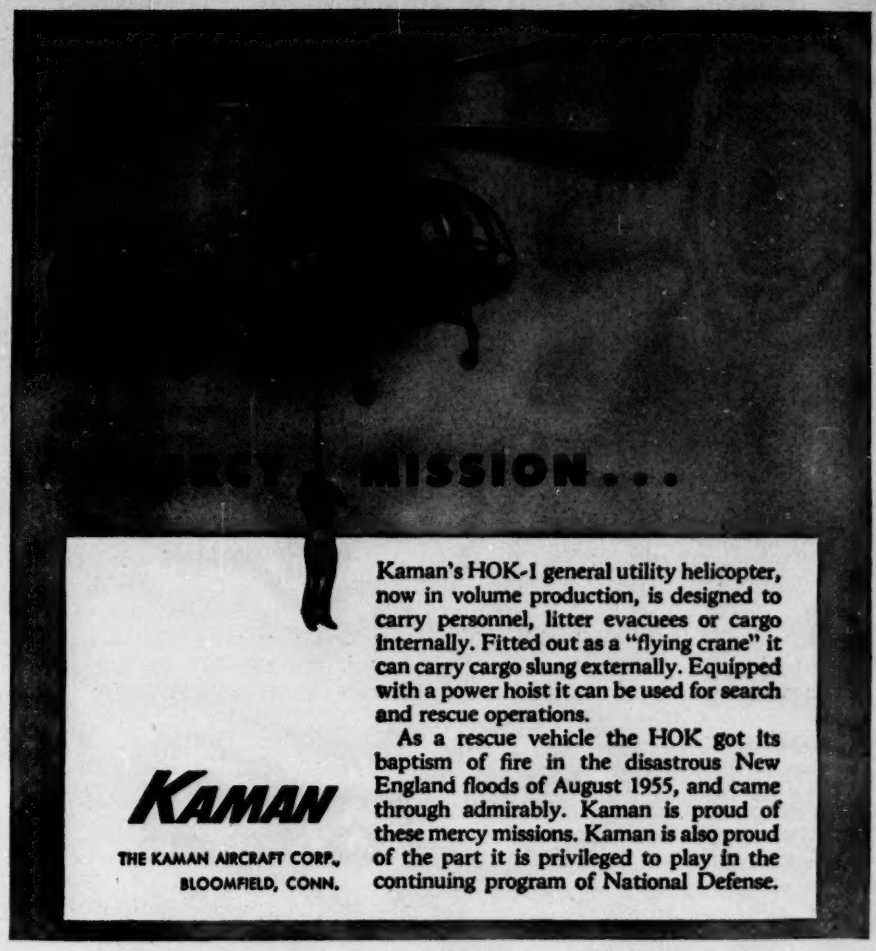
Capt H. B. Stowers

POST TAGS

TTU LANT, LITTLE CREEK, VA.— I doubt that any Marine reading this article has not gone through the time-consuming, frustrating and exasperating procedures required for issuance of post or station tags when reporting for duty at a new station.

Being of the school that cannot condone presentation of a problem without an acceptable solution, I submit that the solution outlined below is workable, will save time, money and material. It is by far much more convenient to all hands than systems now in effect at most posts and stations.

First, control of the issuance of tags



Kaman's HOK-1 general utility helicopter, now in volume production, is designed to carry personnel, litter evacuees or cargo internally. Fitted out as a "flying crane" it can carry cargo slung externally. Equipped with a power hoist it can be used for search and rescue operations.

As a rescue vehicle the HOK got its baptism of fire in the disastrous New England floods of August 1955, and came through admirably. Kaman is proud of these mercy missions. Kaman is also proud of the part it is privileged to play in the continuing program of National Defense.

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would have to be centralized at Headquarters Marine Corps. An acceptable tag would have to be standardized throughout the Marine Corps. This tag should be metal, should be issued in pairs and be mounted on the front and rear of the car. The key to this whole system is that the number of the tag should be the same as the file or serial number of the officer or staff NCO with different color combination for each. These tags would be honored at all Marine Corps posts and stations and I believe that eventually Navy and Army installations would accept them as valid. Certain restrictions would have to be placed on the issuance of these tags to prevent indiscriminate issue. This could be done by authorizing these tags only for career officers with at least 3 years active duty and for staff noncommissioned officers. The initial expenses could be borne by HQMC, although I believe that a contract could be let which would maintain the cost at no more than one dollar per set. Those personnel requiring more than one set of tags or to replace lost or stolen tags, could bear the expense themselves.

Advantages to this proposed system of tags are manifest. Most obvious would be the savings in men, money and material. Of course, limited systems would be required at all stations to service those individuals who do not meet eligibility requirements, but this could be done at a great reduction in personnel.

For those proponents of the decal system on the windshield I offer these arguments in favor of the 2 metal tags. First, the tags offer ready and clear identification both front and rear — a boon to the regulation-enforcing agencies. Many states prohibit decals on windshields, other than state inspection stickers.

When a Marine is ordered overseas, these tags could serve to facilitate admission to the post or station for his dependents.

The public relations angle is also important. As the American public comes to recognize and acknowledge these tags they would serve as a continuing Marine Corps media of introduction, not only to the public but to all other Marines. I am sure that there are only a few of us who, while traveling, have not been approached at a service station or restaurant by a former Marine who served with the 1st MarDiv on Guadal. Why not improve on these relationships by adopting an emblematic tag easily recognized by one and all?

For those who question as to how we can determine that the insurance coverage is kept in effect, I invite attention to the eligibility requirement which authorizes only career officers with 3 years active service and staff noncommissioned officers to have these tags. If the certification of these officers and staff NCOs that they have and will maintain the required liability and property damage insurance coverage is not enough, we might as well all pack up and go home.

What happens if the tags are lost or stolen? Well, they are replaced at the individual's expense and the same action is taken as is now done locally, in that current lists of lost tags are circulated among the various Provost Marshal Offices. After all, a tag only grants an individual admission to a post or station — it doesn't give him access to the Confidential Locker.

In these times of planned economy and cost-consciousness here is a plan that will have money, time, men — a plan that I consider will be widely accepted, and a plan that will give the Marine Corps another *First*.

LtCol W. N. Wilkes, Jr.

POST SCRIPT TO PRICKETT'S OLD CORPS

CAMP PENDLETON, CALIF.—It seems that no matter where you go in the Marine Corps today there is the never-ending statement *It's not like the old Corps*. The following is an account of my answer.

WHERE IS THAT OLD MARINE CORPS?

Iwo Jima was taken this morning by a tired, hard-driving force of the United States Marines. After 3 days of bitter struggle against determined, well-trained soldiers of the Japanese Empire the American Flag was finally raised on top of Mount Suribachi. The heroic quintet responsible for the planting of the flag was composed of 4 Marines and a Navy Corpsman.

This was the newscast I heard on 16 March 1945. At the time, I was about 10 years old and immediately my every thought and desire turned towards the joining of this fighting organization.

After the war they came back. No matter into which category they fitted, the name Marine tagged on them meant superhuman defender of his land.

In Korea, this fine organization faced different procedures of the oriental-type warfare. Once again the Marine Corps adjusted itself to conquering war's obstacles.

From the swampy jungles of Guadalcanal and the volcanic ash of Iwo to Inchon, the Reservoir and the 38th Parallel the Marines showed the OLD fight, the OLD energy, the OLD experience and found victory the OLD way — by guts and determination.

The time: 17 June 1956; the place: Camp Pendleton, California, training spot for World War II heroes.

Can we Marines assemble and fight as they did at Iwo and the 38th Parallel?

We participate in MARLEXs, hikes, gun-drill, but never once do I think of these practice sessions as forerunners of the big thing. To me they are days on LSTs, sore and worn feet, and tiring weary runs up and down hills.

Some day we are going to be side by side and it will not be Aliso Beach that we are hitting and the enemy will not be Marine Aggressors. Let us sit back and reconsider why we are here. We are a fighting unit and we will have to start thinking as such.

Will the OLD CORPS come to life if a national emergency arises? Will we prove to be as successful as they have been in the past? The training we undergo is headed in that direction — all we have to do is help it along with the right attitude, and in case of war you would be surprised how fast the OLD CORPS will return.

Cpl G. K. Power

RE-ENLISTMENT

MCAS, MIAMI, FLA.—A great deal has been written and there has been much discussion of the problem of leadership and re-enlistment in the Marine Corps. It is my belief that we are encouraging this problem by our willingness to blame industry, a desire for further education and a mryiad of other factors. In our search for a scapegoat we seem to overlook the fact that some of the fault might possibly lie at our own doorsteps. These are ground rules that differ from squad to squad, from platoon to section and to officer to NCO. HQMC, field commands and local commands lay down a system in general terms, and from there it becomes subject to interpretation and action by everyone. How well the system works, therefore, depends on the junior leader. It is his professional knowledge, authority, leadership ability and ability to co-ordinate the demands of the training schedule and the various ground rules into a coherent system. In this category, then, must lie at least a partial answer to the problem of rapid junior leader turnover.

A professional soldier does not feed on money or privileges alone because both are generally short in battle. What he does want is recognition, to know where he fits in, to be able to *earn* the recognition of higher rank and respon-

sibility, and to be a good Marine. How can he meet these needs and thus possibly solve our problem? Some possible solutions might be:

1) The junior leader's professional knowledge might be supplemented by making available manuals of the caliber of the *NCO Guide, Guidebook for Marines,* or the *Naval Rating Manuals,* in small compact forms geared to Marine leadership needs. These manuals would supply a great deal of technical and professional knowledge which now must be dug out of various sources, and often apply only indirectly to Marine Corps needs.

2) Leadership authority might be raised by requiring rigid requirements for permanent rank and using temporary rank for probationary observation. Thus a man would have to prove himself capable of assuming the responsibility of higher rank permanently. This would make permanent rank something to earn and thus cherish.

3) Leadership ability could be enhanced by providing a course in applied military psychology suitable for the junior leader.

4) The leader's ability to co-ordinate the training and ground rules into a system can only be learned by experience. This can best be obtained by allowing a probationary leader to work with an experienced man for a while prior to giving him a unit of his own. The majority of new leaders would give their eye teeth for constructive assistance from an old hand.

5) A senior leader should remember that the men and sub leaders under him are potential professional Marines. They should be given recognition for their efforts and military abilities. Give them the necessary authority that goes hand in hand with their responsibility, then demand the highest standards of each man.

In conclusion, it is the reasoning of the author that if at base level the Corps is maintained at a high level of professional competence, the necessary professional Marines to fill the vacated ranks will soon be knocking at our doors. A thing worth its salt in sweat is never easy. To make leadership easy cheapens it in the eyes of all. One good leader is to be preferred over several mediocre ones, for he utilizes the whole team, not just parts of it.

TSgt C. I. Roberts

ED: *The Marine Corps Drill Manual published by the Marine Corps Association will help to eliminate part of TSgt Roberts' complaint. See the back cover for further details.*

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BOOKS OF INTEREST TO OUR READERS

The Big Stick Transferred . . .

THE GENTLEMAN AND THE TIGER —The Autobiography of George B. McClellan, Jr., 370 pages illus., index, Philadelphia & New York: J. B. Lippincott Co. $6.00

The government by committee of our day was fathered and fostered by a generation of giants; men like Teddy Roosevelt, William Jennings Bryan and Cornelius Vanderbilt. It was these generations that produced George B. McClellan, Jr. In his autobiography he provides an insight in depth of the dynamic evolution in American poltics that took the big stick from the strong man and gave it to the committee.

McClellan brought to the American political scene an aristocratic heredity for the first time since the passing of the colonial artistocracy of Washington, Jefferson and Adams. Although he was the son of the dismissed head of the Union Army—Gen McClellan, one of the most controversial military and political figures in American history—he succeeded in politics, where his father had failed. Although he defended his father to the end, he made few of his mistakes. As a member of the House of Representatives and then mayor of New York from 1903 to 1909, he exemplified the synthesis of personal power politics and Jacksonian democracy.

It is evident from the title that McClellan recognized the paradox of a member of the aristocracy serving the Tammany Hall machine as he did for many years. It is not so evident that the author realized that this paradox served to destroy personal power politics while bringing more power to the public. The inconsistencies of circumstances that brought the gentleman to serve the tiger are more intriguing than the gentleman's personality.

"Aristocrat" sticks out all over this chronology, from the upper-class, "Grand Tour" background to his selective appointment as New York's Art Commissioner. The other side of the coin comes to light when as a Tammany machine politician the gentleman takes the tiger by the tail. McClellan was brought into the machine because he possessed the characteristics of gentility that would give a dirty slate an air of respectability. The tiger, however, is shaken to its foundations when McClellan's respectability turns out to be more than a facade.

That McClellan's good breeding is more apparent in his actions than in his philosophy is well documented by the editor. His philosophy that "the community is best governed which is least governed" is contradicted when, by his own admission, he becomes "exceedingly dictatorial and arbitrary" for the sake of good government. Further, he stated that he could not conceive of government as an instrument of social change or reform, yet he fights with righteous fury to curb the vices of a roaring, wide-open New York.

Harold C. Syrett's editing adds facts and flavor to the book and sets the record straight where, on occasion, McClellan's memory fails. For the student of American political science this book is a must. For the student of history it is an exceedingly fine source for the transition period from the end of the Civil War to World War I. For the general reader it is an opportunity to make a nodding acquaintance with the colorful characters who were giants of their generations.

Reviewed by Maj T. D. Hess

ED: *The reviewer is an instructor at the Marine Corps Extension School.*

American War Art . . .

THE AMERICAN WARS, 1775-1953 —Roy Meredith, Cleveland, Ohio: World Publishing Company. $10.00

The American Wars, 1775-1953—is a pictorial anthology of American militariana from the days of the French and Indian Wars up through the Korean conflict. It attempts, as much as possible, to record the American wars as seen through the eyes of men who actually took part in them. By restricting his material, in the main, to the works of contemporary artists, Meredith makes a valuable, and often dramatic, contribution to those interested in a first hand record of our military past.

For those who are inclined to believe that good 19th Century military art was limited to the battlefields of Europe (as illustrated by Vernet, Detaille, et al), Meredith has produced ample evidence that the American fighting man was not slighted on contemporary canvases. While the campaigns on this side of the Atlantic were possibly lacking in all the pageantry that accompanied battles between kings and emperors, they were undoubtedly fought with the same fury as Austerlitz or Waterloo or Balaclava and provided equal inspiration to our own painters.

Probably the most disappointing feature is the book's lack of color. Of course, in publications of this sort, the inevitable compromise must be made between ultimate cost and quality of reproduction. Despite the fact that the inclusion of colored plates would have increased the purchase price considerably, it is unfortunate that not even a limited effort was made in this direction.

We of today are fortunate that past generations left such an excellent pictorial record behind them. What is especially amazing is that the armed services themselves produced so many talented artists: from Col John Trumbull and Charles Willson Peale of the Revolution up through the combat artists of WW II and Korea. Included are the works of such standbys as the Navy's Capt William Bainbridge Hoff and Lt (later RAdm) Henry N. Walke; the Army's Lt Seth Eastman and Col Julian Scott and those unsurpassed recorders of mid-19th Centry Army life, Fredrick Remington and Winslow Homer. What makes *The American Wars* truly valuable, however, is the presence of the works of many lesser-known men who were soldiers, sailors or marines first and artists second. These knew of what they spoke. Just as Capt John Thomason and Col Donald Dickson produced their field sketches of Marines in WW I and II, contriving an authenticity to their subjects that strikes a respondent chord in all who lived through those conflicts. So, too, did the Confederacy's Lt Allen Redwood and Union Cpl Nep Roesler draw with that close familiarity possible only from direct contact with actual life in the ranks. Indeed as one compares Trumbull's pencil studies of soldiers of the Continental Army with Redwood's and Homer's sketches of Johnny Reb and Billy Yank or with the Thomasons or Dicksons of the 20th Century,

one realizes that although modern weapons may have changed the design of the battlefields, man is still the same creature of flesh and blood he has always been.

The American Wars does not presume to be a definite history. It has a limited, readable text which ties the illustrative documentary together and fits the artists into context with their times. Possibly its weakest sections are the final 2 chapters covering WW II and Korea. Compared to what comes before, some of the art depicting these last 2 chapters is second rate. This is possibly because of our current reliance upon the camera; or some may argue with considerable reason, that the technicalization of war in this machine age has eliminated color forever from the battlefields, thus offering the artist much less upon which to draw. It is felt, however, that in some instances this latest material could have been more judiciously selected. Withal Meredith has produced an excellent volume —one that should prove an interesting addition to any military library and a valuable reference source to the researcher devoted to authenticity and contemporary detail.

Reviewed by LtCol J. H. Magruder, III

ED: *LtCol Magruder is curator of the Marine Corps Museum.*

Eccentric Judaphile . . .

GIDEON GOES TO WAR — Leonard Mosley. 256 pages, illustrated and indexed. New York: Charles Scribner's Sons, 1955. $3.50

This is the story of MajGen Orde C. Wingate, of the British Army. Told by his friend Leonard Mosley, a correspondent, it is the tale of one of those strange, off-center men whom that army produces — or harbors — from time to time. Orde Wingate is spiritual kin to one of the strangest — "Chinese" Gordon — and blood relative of another — T. E. Lawrence. He resembles both of them.

Wingate seems to have gone through life reeling from the impact of his childhood surroundings. For he came from a home which was intensely religious after the fashion of those stern Protestant sects which attempt, in the 20th Century, to model their existence upon that of the Israelites of 4,000 year before. He studied the Old Testament with the unrelenting industry of a Jewish boy in the Talmud Torah. And so thoroughly did this teaching sink into him that in later years, in Palestine, he so identified himself with the emerging modern Hebrews that he offered to commit for them what can only be called treason, dress it how you will in garments of idealism.

Mr. Mosley gives us a straightforward, unslanted account of Wingate's short life (he was killed at the age of 41 in Burma). But the picture which emerges is fantastic. In fact, I find myself in the position of the back country farmer who, upon seeing a giraffe for the first time, declared flatly, "I don't believe it. There ain't no such animal." But — there is the giraffe, and there is Wingate.

For here is what we see as we go along in the objectively presented tale: a) An officer who seems deliberately to have cultivated little personal habits which range from the silly to the disgusting. b) An officer who offered his services as a saboteur to an alien and irregular army (the Haganah) and advised it to attack the forces of his own country. c) An officer who, in the presence of colleagues, called a general officer a fool and accused him of being the type which causes his country to lose wars. d) An officer who, in spite of the above, was still of such compelling caliber that he was chosen to direct the Chindit operation in Burma.

Wingate, serving in Palestine, identified himself thoroughly with the Jews, spoke Hebrew and trained them in defense against the Arabs. So intense was his preoccupation with them that he seems to have converted his wife — neither of them was Jewish, by the way. And although the author does not mention it, for some strange reason, his widow gave over their son, born after his father's death, to a kibutz in Israel, to be raised as a Jew in his father's memory.

After the outbreak of war, Wingate took part in the liberation of Ethiopia, leading a column far into that land and disrupting the Italian forces there. Then, after a period of partial eclipse, there came the need for the Burma campaign and his death in that operation. The resemblance to Gordon is almost uncanny and I suspect that emulation played a major part.

I have already mentioned T. E. Lawrence as being another of the eccentrics who appear from time to time in British military history. This may be more than a fortuitous resemblance, for the two of them were kin through Wingate's mother. And the curious part of the matter is that while Wingate began by having a deep admiration for Lawrence, he ended by holding exactly the opposite point of view. Mosley explains that Wingate changed over when he "uncovered some of the true facts about Lawrence's career." Well, a good many "facts" have been kicked around about Lawrence in the past few years and if I recall correctly it has never been decided which are the facts and which are not.

But there was some revulsion of feeling on the part of Wingate, for about the time of his penetration of Ethiopia, he wrote out two short, rather mannered essays on guerrilla warfare, one of which he called *The Wrong (Lawrence) Method* and the other *The Right Method*. In the former he shamelessly misquoted or ignored completely the basic theories of his aberrant, bar sinister relative (to which he had ready access in the form of Lawrence's profound essay in the Encyclopedia Britannica). The final fillip to all this is given by the demonstrable fact that the basic tactics of the Chindit operation are pure Lawrence.

The reading of this book leaves one with certain convictions. There should be a thorough study, on a basis of psychology, of Wingate. The same sort of thing should be done with Lawrence — perhaps concurrently. And, finally, an exhaustive study of just how, and why, the British military manages to tolerate and use such men without, obviously, coming apart at the seams.

Reviewed by LtCol J. L. Zimmerman

ED: *A well-known military historian, this reviewer is with the Advanced Base Problem Section, MCEC, Quantico.*

Weapons Development . . .

LINCOLN AND THE TOOLS OF WAR—Robert V. Bruce, 368 pages, Footnotes, bibliography, and index, The Bobbs-Merrill Co., Inc., Indianapolis, New York, 1956. 5.00

There have been many books written about Lincoln and they deal with many different facets of his development and personality. The figures of Lincoln as the poor boy eking out an education, the rail-splitter, the unsuccessful businessman, the shrewd politician, the homespun humorist, the Civil War president and the martyr are all very familiar to us. Yet in this book we see the character of Lincoln developed from a unique viewpoint—his interest in ordnance and things mechanical. His experiences with new weapons and his struggles to overcome the inertia of the bureaucrats are fully portrayed.

In this book we accompany him on his frequent trips to the Naval Gun Factory and to the Chief of Ordnance's office at the War Department. There we become familiar with two individuals whose roles in the Civil War have seldom been emphasized, RAdm John A. Dahlgren and Gen James W. Ripley. Not being leaders on the fields of battle, the Civil War history books have mentioned them only briefly, if at all. Yet here they are fully drawn and each is given his due for the part he played

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in the war—Dahlgren for the improvements and advances which were made in Naval Ordnance and Ripley for his obstructionist tactics.

And revolving around these 3 personages, Lincoln, Dahlgren and Ripley, we see a host of generals, manufacturers, importers, inventors, newspapermen, lobbyists and Congressmen in a setting of wartime Washington. And in this setting and with these characters we are told the story of the arming of the Union forces. We see the frantic invention and experimentation which will improve those arms. The range of this invention and experimentation is tremendous in scope for as Mr. Bruce states. "Among those long forgotten schemes (of the Civil War) one sees in silhouette almost all the final implements of modern war: the machine guns, the rockets, the armored tanks, the submarines, the poison gases, the air-borne incendiaries—everything but the ultimate force of nuclear bombs. And even this last peerless goal was being groped toward by some in Lincoln's day."

This is history at its best. Mr. Bruce spent 3 years performing research for this book. His time was not wasted. The historian could never question the thoroughness of his work. However, let me not give the impression that this is dry or dull reading. On the contrary, Mr. Bruce has combined the historian's knowledge with a writer's skill, and his presentation reads like an intriguing novel instead of serious history.

For the student of military history this book will reveal a thoroughly treated account of weapons development in the Civil War and we see the part these weapons played in various Civil War battles.

Reviewed by Capt H. D. Fredericks

ED: *Now with the 3d Mar Div, Capt Fredericks was previously an instructor in the Dept of History and Government, USNA.*

Technical But Readable . . .

ELECTRONS, WAVES AND MESSAGES—John R. Pierce, 318 pages. Garden City, New York: Hanover House. $5.00

Served daily by a multitude of the products of the science of electronics ranging from telephones through television, it is only natural for us to wonder what makes them work. John R. Pierce explains the fundamentals of modern electronics and relates these principles to the familiar devices of the world around us. He has endeavored to allow the reader to feel about his TV set much as he does about his automobile; that he understands why it works, even though he lacks the technical knowledge to build one.

Not satisfied with the often dry and involved academic approach to the subject, the author contrives to maintain an almost conversational style even while exploring the complexities of electron motion and transistor operation. He puts the reader on a firm footing at the start with a lucid presentation of the laws derived by Newton and Maxwell, and continues to logically develop his subject through electric and magnetic fields, vacuum tubes, radiation and television. He portrays the methods used to solve the problems faced by workers in the field of electronics and outlines several of the projects presently under development. Of particular interest to the military reader are the sections dealing with the limitations and capabilities of microwave systems (radio-relay and radar) which affect the present and future employment of these systems.

Whether the reader is an interested layman or a serious professional, this brilliantly written book will prove a fascinating means to a better understanding of one of the most active sciences of our modern technology.

John R. Pierce is eminently qualified to write a book such as this. He obtained his PhD *magna cum laude* from California Institute of Technology, is a member of the National Academy of Sciences, a fellow of the Institute of Radio Engineers and member of several other prominent scientific organizations. He is Director of Research: Electrical Communications at the Bell Telephone Laboratories and enjoys considerable renown among scientific groups for his valuable contributions in the fields of high frequency electronics and communications techniques.

Reviewed by 1stLt J. K. Parker

ED: *This reviewer is an instructor in communications at MCS.*

Geronimo . . .

PARATROOPER—LtCol Francis X. Bradley and LtCol. H. Glen Wood; Military Service Publishing Co., Harrisburg, Pa. $3.50

A soft-cover picture book, aimed primarily at the PX trade, this story of the US Army paratroops tells, by means of brisk action photographs, the story of the Army parachutist and his training.

The accompanying text is meager and written on a high-school-yearbook level that credits "rugged, ruthless" instructors with "spring-steel muscles." Prose of this kind is evidently calcu-

lated by the authors, who are both Regular Army airborne officers, to appeal to a vast audience of enlisted men and their relatives.

No overall history of parachuting is given, nor is any mention made of Paramarines or of foreign airborne operations. British and German parachutists, for instance, set the pace early in the war, while the Russians pioneered mass descents in the 1930s—though, curiously enough, they never used parachutists in actual combat.

Perhaps the best writing in the whole volume, which can be read in an hour, is a quotation from a speech by Army Chief of Staff, Gen Maxwell D. Taylor, wartime commander of the 101st Abn Div in Normandy, Holland, the Ardennes and Alsace. "He was young, bold, rowdy and sometimes offensively swaggering," Gen Taylor writes of his paratroopers. "Yet when the cards were down, he was the most soul satisfying comrade that a man could want on the battlefield."

The impression is created (and not dispelled by a brief, passing reference to the contrary) that most of a paratrooper's time is spent in jumping. Exactly the reverse is true, for the bulk of his time is spent afoot on the ground, with fewer vehicles, lighter weapons, and less support than the regular infantry. Though trained for brief action as shock troops, parachute infantry regiments often wound up, like Marines, as infantry in the line.

Reviewed by D. K. Webster

ED: *Mr. Webster served with the 506th Pcht Inf Regt, 101st Abn Div for 3 years in WWII, jumping into France and Holland. He is presently with North American Aviation.*

Questions and Answers . . .

THE ANSWER BOOK ON NAVAL SOCIAL CUSTOMS — Ester Wier and Dorothy Coffin Hickey. Harrisburg: Military Service Publishing Company. 109 pages. $2.50

This book stems from an appreciation of the many problems which arise from a lack of knowledge of established naval social customs. It is a question and answer book and is comprehensive in its coverage of all types of social events. Although it does not cover Marine Corps activities in detail, it is superior to many books which have appeared in that it does not elaborate on extraneous trivia. Instead, this small, handy volume offers a concise compilation of the facts. The *Answer Book* has the answers in accessible form and is illustrated with examples of cards, notes etc. as well as a sprinkling of cartoons.

ANSWERS

Below are the answers to the questions on page 4, with notations as to what the official reference is.

1. b) False—49257.7 MCM
2. b) False—MC Bulletin 15-55
3. c) By not less than 3 inches nor more than 4 inches—49056.1 MCM
4. c) By not less than 3 inches nor more than 4 inches—49056.1 MCM
5. a) True—MC Memo 49-55
6. d) None of the answers are correct—49168 MCM
7. b) False—59254.1 MCM
8. a) True—MC Memo 49-55
9. a) True—49000.7 MCM
10. c) National Defense Service Medal,
    d) UN Service Medal—49251.2 MCM
11. b) False—49165.6 MCM
12. b) False—49054.4 MCM
13. c) One V in the center with 1 gold star to your right of the V—49255.2 MCM
14. c) One inch—49163.4 MCM
15. a) True—49157.5 MCM
16. b) 3¼ inches—49052.2 MCM
17. b) False—49009.1 MCM

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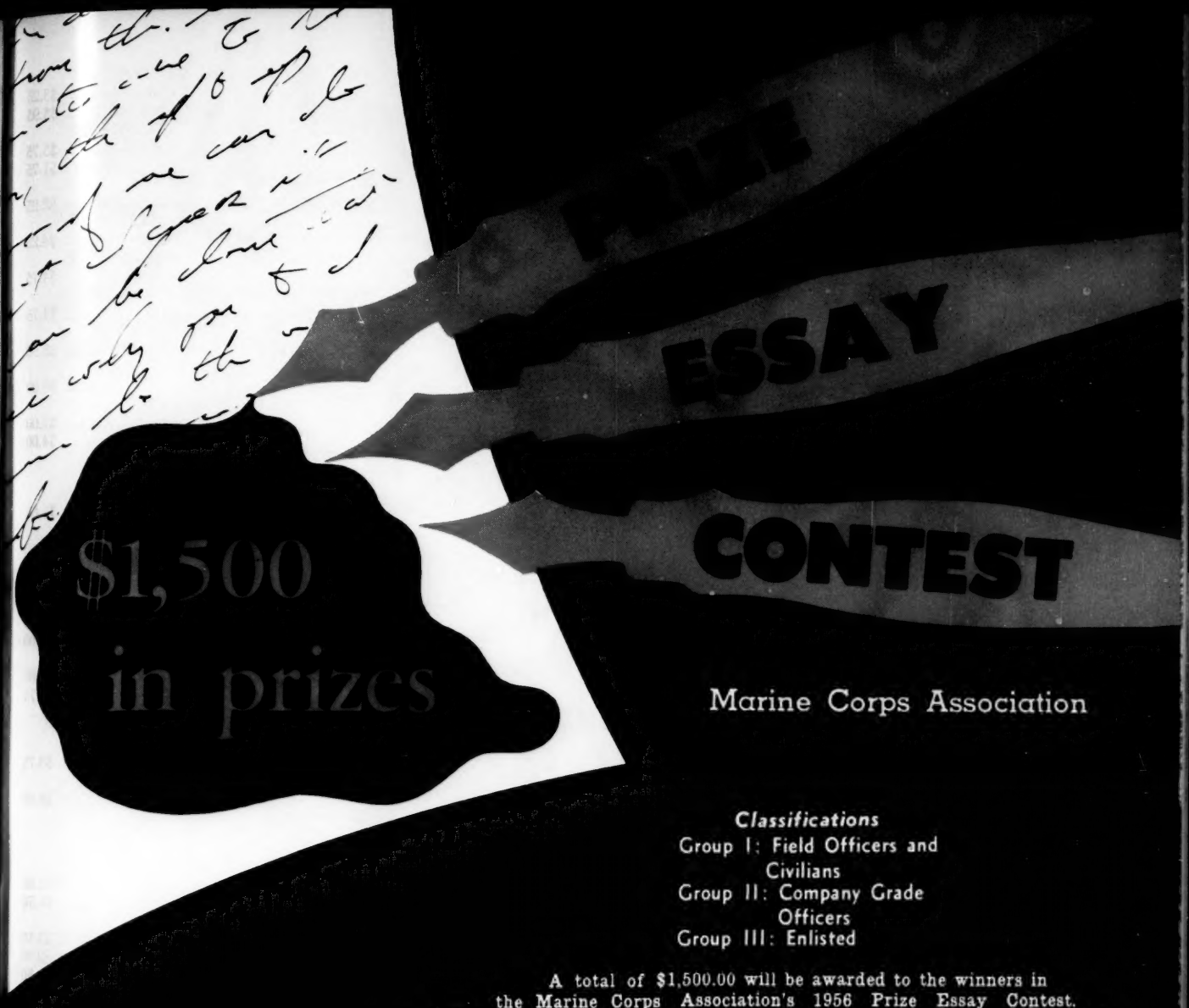

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